

HP Remote Insight Lights-Out Edition II User Guide



May 2003 (Third Edition)
Part Number 232664-003

© 2003 Hewlett-Packard Development Company, L.P.

Microsoft®, Windows®, MS_DOS® and Windows NT® are trademarks of Microsoft Corporation.

Hewlett-Packard Company shall not be liable for technical or editorial errors or omissions contained herein. The information in this document is provided “as is” without warranty of any kind and is subject to change without notice. The warranties for HP products are set forth in the express limited warranty statements accompanying such products. Nothing herein should be construed as constituting an additional warranty.

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

May 2003 (Third Edition)

Part Number 232664-003

Audience Assumptions

This guide is for the person who installs, administers, and troubleshoots servers. HP assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels.

Contents

Installing the RILOE II	11
Supported Hardware and Software	11
RILOE II Kit Contents	13
Keyboard/Mouse Adapter Cable Configuration.....	14
Remote Insight Cable Configuration.....	15
Server PCI Slot and Cable Matrix.....	16
Preparing to Install the RILOE II.....	19
Installing the RILOE II in the Server.....	20
Installing Internal Cables	21
Installing a Virtual Power Button Cable (4-pin)	21
Installing a Remote Insight Cable (16-pin).....	22
Installing a Remote Insight Cable (30-pin).....	22
Connecting External Cables to the RILOE II.....	23
Keyboard/Mouse Adapter Cable Connection	23
Headless Server Deployment.....	24
Monitor Cable Connection	25
LAN Cable Connection	26
AC Power Adapter Connection	26
Powering Up the Server	27
RILOE II Configuration Parameters	29
RILOE II Configuration Table.....	29
User Settings	33
Global Settings.....	34
Network Settings.....	35
SNMP Settings.....	37
Directory Settings	38
Configuring the RILOE II	39
Configuration Options.....	39
Remote Setup.....	40
ROM-Based Setup Utility F8	40
Disabling DNS/DHCP	40
SmartStart Setup of RILOE II	41
Installing RILOE II Device Drivers.....	41
Microsoft Windows NT, Windows 2000, and Windows 2003 Server Driver Support.....	42

Novell NetWare Server Driver Support.....	43
Red Hat Linux and SuSE Linux Server Driver Support	44
Optimizing Performance for the Remote Console	45
Browser Settings	45
Tested Browsers	46

Using the RILOE II 47

Operational Overview	47
Accessing the RILOE II for the First Time	47
Features of the RILOE II	50
Using the Graphical Remote Console to Manage the Host Server.....	51
Using Enhanced Features of the Remote Console	52
Remote Console Hot Keys.....	53
Troubleshooting the Host Server	54
Additional Information on the State of the Host Server	54
Video Replays of Previous Server Reset Sequences	55
Information Logs	56
Restarting the Host Server	56
Using Virtual Devices	57
Virtual Floppy Screen.....	57
Diskette Image Utility.....	60
Virtual Media.....	63
Managing the User and Configuration Settings of the RILOE II.....	68
User Configurations and Settings	68
Modifying Network Settings for the RILOE II.....	69
Keeping the RILOE II Firmware Current.....	71
SNMP Alerts.....	72
Security Settings	74
Resetting the RILOE II to the Factory Default Settings.....	75
Getting Help.....	75
Integrating the RILOE II with Insight Manager 7.....	75
Receiving SNMP Alerts in Insight Manager 7	76
Launching a Web Browser	76
RILOE II Diagnostics	77
Additional Help for Insight Manager 7.....	78
Pocket PC Access with the RILOE II	78

Group Administration 85

Features	85
Group Administration Using Insight Manager 7.....	86
Lights-Out Configuration Utility	87
Query Definition in Insight Manager 7.....	87
Application Launch Using Insight Manager 7	88
Group Administration Using Batch Processing	90

Directory Services

93

Introduction to Directory Services	93
Directory Services Support	93
Required Software.....	95
Schema Installer.....	95
Schema Preview	95
Setup.....	96
Results	98
Management Snap-In Installer.....	98
Directory Services for Active Directory	99
Active Directory Installation Prerequisites	99
Directory Services Preparation for Active Directory.....	99
Snap-in Installation and Initialization for Active Directory	101
Directory Services Objects for Active Directory.....	107
Active Directory Lights-Out Management	115
Directory Services for eDirectory	116
eDirectory Installation Prerequisites.....	116
Snap-in Installation and Initialization for eDirectory	117
Directory Services Objects for eDirectory.....	123
Role Restrictions.....	125
Lights-Out Management	128
Configuring Directory Settings.....	129
User Login to RILOE II	130

Troubleshooting the RILOE II

133

Login Name and Password Problems.....	133
Video Problems.....	134
Network Connection Problems	134
Inability to Connect to the Board Through the NIC	134
Inability to Obtain SNMP Information from Insight Manager 7 when Connected to the Remote Insight Network Interface.....	135
Web Browser Not Connecting to the RILOE II IP Address	136
Alert and Trap Problems	136
Inability to Receive Insight Manager 7 Alarms (SNMP Traps) from the RILOE II.....	136
Server Power Status Reported Incorrectly and Send Test Trap Not Responding	136
NetWare Initialization Errors	137
NetWare Error Message Table	138
Miscellaneous Problems	138
Incorrect Time or Date of Entries in the Event Log	138
Inability to Reboot the Server.....	139
Inability to Upgrade the RILOE II Firmware	139
Resetting the RILOE II to Factory Default Settings	140

Switch Settings (SW3): Factory Defaults	141
Interpreting LED Indicators	141
Accessing System Partition Utilities	141
Event Log Entries.....	142
Directory Services Errors.....	146
Directory Server Connect Failed	147
Invalid Credentials.....	148
Invalid Directory Server Address or Port	148
Directory Server Timeout	148
Unauthorized, Couldn't Find RILOE II Object.....	148
Unauthorized, No Readable Roles	149
Unable to Read Restrictions on Object.....	149
Time Restriction Not Satisfied	149
IP Restriction Not Satisfied	149
Unauthorized	149

Remote Insight Command Language 151

Overview of the Remote Insight Board Command Language	152
RIBCL General Guidelines	152
XML Header	152
Data Types	153
String	153
Specific String	153
Boolean String	153
RIBCL.....	154
RIBCL Parameter	154
RIBCL Runtime Errors.....	154
LOGIN	154
LOGIN Parameters	155
LOGIN Runtime Errors	155
USER_INFO	155
USER_INFO Parameter.....	156
USER_INFO Runtime Error.....	156
ADD_USER.....	156
ADD_USER Parameters.....	157
ADD_USER Runtime Errors.....	159
DELETE_USER	160
DELETE_USER Parameter.....	160
DELETE_USER Runtime Errors	160
GET_USER.....	161
GET_USER Parameter	161
GET_USER Runtime Errors.....	161
GET_USER Return Messages	161
MOD_USER	162

MOD_USER Parameters	163
MOD_USER Runtime Errors	165
GET_ALL_USERS.....	165
GET_ALL_USERS Parameters.....	166
GET_ALL_USERS Runtime Error	166
GET_ALL_USERS Return Messages	166
GET_ALL_USERS_INFO	167
GET_ALL_USERS_INFO Parameters	167
GET_ALL_USERS_INFO Runtime Errors	167
GET_ALL_USERS_INFO Return Messages.....	167
RIB_INFO.....	168
RIB_INFO Parameter	168
RIB_INFO Runtime Errors.....	169
RESET_RIB.....	169
RESET_RIB Parameters.....	169
RESET_RIB Runtime Errors.....	169
GET_NETWORK_SETTINGS	169
GET_NETWORK_SETTINGS Parameters	170
GET_NETWORK_SETTINGS Runtime Errors	170
GET_NETWORK_SETTINGS Return Messages.....	170
MOD_NETWORK_SETTINGS.....	171
MOD_NETWORK_SETTINGS Parameters.....	172
MOD_NETWORK_SETTINGS Runtime Errors.....	174
DIR_INFO	174
DIR_INFO Parameter.....	174
DIR_INFO Runtime Errors	175
GET_DIR_CONFIG	175
GET_DIR_CONFIG Parameters	175
GET_DIR_CONFIG Runtime Errors	175
GET_DIR_CONFIG Return Messages.....	175
MOD_DIR_CONFIG.....	176
MOD_DIR_CONFIG Parameters.....	177
MOD_DIR_CONFIG Runtime Errors.....	177
GET_GLOBAL_SETTINGS.....	178
GET_GLOBAL_SETTINGS Parameters.....	178
GET_GLOBAL_SETTINGS Runtime Errors	178
GET_GLOBAL_SETTINGS Return Messages	178
MOD_GLOBAL_SETTINGS	179
MOD_GLOBAL_SETTINGS Parameters	180
MOD_GLOBAL_SETTINGS Runtime Errors	182
CLEAR_EVENTLOG	182
CLEAR_EVENTLOG Parameters	183
CLEAR_EVENTLOG Runtime Errors	183
UPDATE_RIB_FIRMWARE.....	183

UPDATE_RIB_FIRMWARE Parameters.....	184
UPDATE_RIB_FIRMWARE Runtime Errors.....	184
GET_FW_VERSION.....	184
GET_FW_VERSION Parameters.....	185
GET_FW_VERSION Runtime Errors.....	185
GET_FW_VERSION Return Messages.....	185
INSERT_VIRTUAL_FLOPPY.....	185
INSERT_VIRTUAL_FLOPPY Parameter.....	185
INSERT_VIRTUAL_FLOPPY Runtime Errors.....	186
EJECT_VIRTUAL_FLOPPY.....	186
EJECT_VIRTUAL_FLOPPY Parameters.....	187
EJECT_VIRTUAL_FLOPPY Runtime Errors.....	187
COPY_VIRTUAL_FLOPPY.....	187
COPY_VIRTUAL_FLOPPY Parameter.....	187
COPY_VIRTUAL_FLOPPY Runtime Errors.....	188
GET_VF_STATUS.....	188
GET_VF_STATUS Parameters.....	188
GET_VF_STATUS Runtime Errors.....	189
GET_VF_STATUS Return Messages.....	189
SET_VF_STATUS.....	189
SET_VF_STATUS Parameters.....	189
SET_VF_STATUS Runtime Errors.....	190
HOTKEY_CONFIG.....	190
HOTKEY_CONFIG Parameters.....	191
HOTKEY_CONFIG Runtime Errors.....	191
SERVER_INFO.....	192
SERVER_INFO Parameter.....	192
SERVER_INFO Runtime Error.....	192
GET_HOST_POWER_STATUS.....	192
GET_HOST_POWER_STATUS Parameters.....	193
GET_HOST_POWER_STATUS Runtime Errors.....	193
GET_HOST_POWER_STATUS Return Messages.....	193
SET_HOST_POWER.....	193
SET_HOST_POWER Parameters.....	194
SET_HOST_POWER Runtime Errors.....	194
GET_VPB_CABLE_STATUS.....	194
GET_VPB_CABLE_STATUS Parameters.....	195
GET_VPB_CABLE_STATUS Runtime Errors.....	195
GET_VPB_CABLE_STATUS Return Messages.....	195
RESET_SERVER.....	195
RESET_SERVER Parameters.....	196
RESET_SERVER Errors.....	196
GET_ALL_CABLES_STATUS.....	196
GET_ALL_CABLES_STATUS Parameters.....	196
GET_ALL_CABLES_STATUS Runtime Errors.....	197

GET_ALL_CABLE_STATUS Return Messages	197
Lights-Out DOS Utility	199
Overview of the Lights-Out DOS Utility	199
CPQLODOS General Guidelines.....	199
Command Line Arguments	200
CPQLODOS	202
CPQLODOS Parameter	202
CPQLODOS Runtime Error	202
MOD_NETWORK_SETTINGS.....	202
MOD_NETWORK_SETTINGS Parameters.....	203
MOD_DIR_CONFIG.....	205
MOD_DIR_CONFIG Parameters.....	206
ADD_USER.....	207
ADD_USER Parameters.....	207
Technical Support	209
Telephone Numbers	209
Regulatory Compliance Notices	211
Federal Communications Commission Notice.....	211
Class A Equipment	211
Class B Equipment	212
Modifications.....	212
Declaration of Conformity for Products Marked with the FCC Logo, United States Only ..	212
Canadian Notice (Avis Canadien).....	213
European Union Notice.....	213
BSMI Notice	214
Japanese Notice.....	215
Acronyms and Abbreviations	217
Index	219

Installing the RILOE II

In This Section

Supported Hardware and Software.....	11
RILOE II Kit Contents	13
Keyboard/Mouse Adapter Cable Configuration.....	14
Remote Insight Cable Configuration.....	15
Server PCI Slot and Cable Matrix	16
Preparing to Install the RILOE II	19
Installing the RILOE II in the Server	20
Installing Internal Cables.....	21
Connecting External Cables to the RILOE II.....	23
Powering Up the Server.....	27



WARNING: Some ProLiant servers are capable of producing energy levels that are considered hazardous. Do not remove enclosures or bypass the interlocks provided to protect against these hazardous conditions. Installation of accessories and options in areas other than front hot-plug bays should be performed by individuals who are both qualified in the servicing of computer equipment and trained in the hazards associated with products capable of producing hazardous energy levels. Refer to the documentation provided with the server for additional information on installing options in the server.



CAUTION: Using the external mouse/keyboard cables with the internal cables causes conflicts with mouse and keyboard functions.

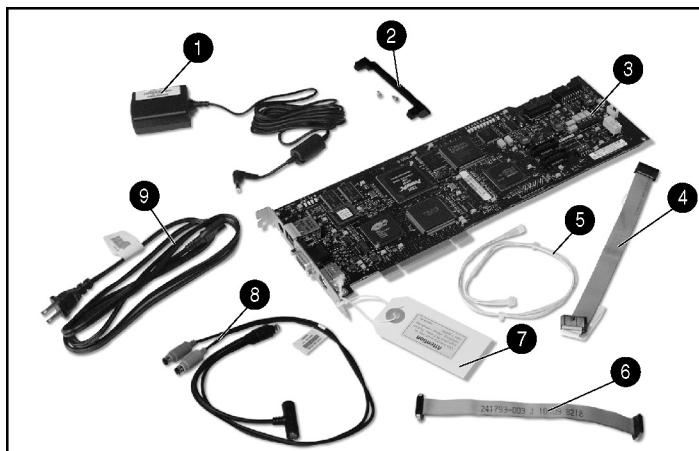
Supported Hardware and Software

The RILOE II can be used in ProLiant servers and selected HP servers. For a detailed list of servers that are supported, refer to the Server PCI Slot and Cable Matrix (on page 16).

You can use the RILOE II with the following network operating systems:

- Microsoft®
 - Windows NT® 4.0 Server
 - Windows NT® 4.0 Enterprise Edition
 - Microsoft® Terminal Services under Windows NT® 4.0
 - Windows® 2000 Server
 - Windows® 2000 Advanced Server
 - Windows® 2000 Datacenter (HP certified versions only)
 - Windows® 2003 Server
- Novell
 - NetWare 5.X
 - NetWare 6.X
- Linux
 - Red Hat Enterprise Linux ES 2.1
 - Red Hat Enterprise Linux AS 2.1
 - Red Hat 7.3
 - Red Hat 8.0
 - Red Hat 9
 - Red Hat Advanced Server 2.1
 - SuSE Linux Enterprise Server 7.0
 - SuSE Linux Enterprise Server 8.0

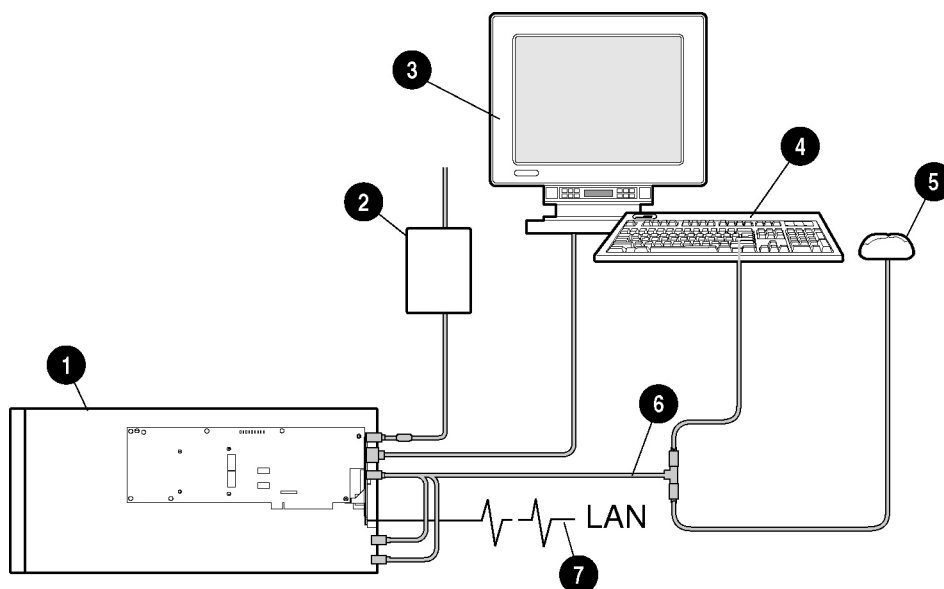
RILOE II Kit Contents



Item	Description
1	AC power adapter
2	PCI extender bracket
3	RILOE II board
4	Remote Insight cable (16-pin)
5	Virtual Power Button cable (4-pin)
6	Remote Insight cable (30-pin)
7	Network settings tag
8	Keyboard/mouse adapter cable
9	Power cord
	System documentation and support software CDs (not shown)

Keyboard/Mouse Adapter Cable Configuration

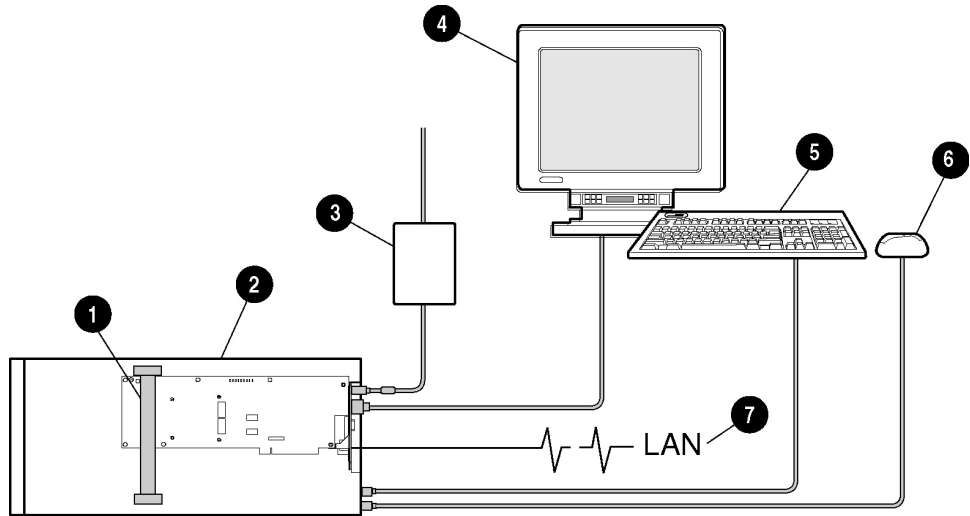
For servers that use the keyboard/mouse adapter cable, the RILOE II connects to the host server, peripheral devices, power source, and LAN.



Item	Description
1	RILOE II installed in a server
2	AC power adapter connected to the RILOE II
3	Monitor connected to the RILOE II
4	Keyboard connected to the RILOE II keyboard/mouse adapter cable
5	Mouse connected to the RILOE II keyboard/mouse adapter cable
6	Keyboard/mouse adapter cable
7	LAN connected to the RILOE II

Remote Insight Cable Configuration

For servers that use the Remote Insight cable, the RILOE II connects to the host server, peripheral devices, power source, and LAN.



Item	Description
1	Remote Insight cable
2	RILOE II installed in a server
3	AC power adapter connected to the RILOE II
4	Monitor connected to the RILOE II
5	Keyboard connected to the server
6	Mouse connected to the server
7	LAN connected to the RILOE II

Server PCI Slot and Cable Matrix

For the most recent information, refer to the matrix at the HP website (<http://www.hp.com/servers/lights-out>).

Server	PCI Slot	Virtual Power Button Cable (see legend)	USB Virtual Floppy/ CD	AC Power Adapter (see note 3)	Keyboard Mouse Adapter Cable	Disable Onboard Video Using the Dip Switch
ProLiant CL380	1	A		Yes	Yes	
ProLiant DL320	Any	B		Yes		
ProLiant DL320 G2	Any	F	Yes			
ProLiant DL360	1	C		Yes		
ProLiant DL360 G2	1	F	Yes			
ProLiant DL360 G3	Any	F	Yes			
ProLiant DL380	1	A		Yes	Yes	
ProLiant DL380 G2	1	F	Yes (see note 1)			
ProLiant DL380 G3	Any	F	N (see note 2)			
ProLiant DL580	6	A		Yes	Yes	
ProLiant DL580 G2	1	F	Yes			
ProLiant DL760	7, 8, 9	G		Yes		
ProLiant ML310	Any	F	Yes			
ProLiant ML330	4, 5	B		Yes		Yes
ProLiant ML330 G2	5	F	Yes (see note 1)			Yes
ProLiant ML330e	4, 5	B		Yes		Yes
ProLiant ML350, 600 - 933MHz	4, 5, 6	A		Yes	Yes	Yes
ProLiant ML350, 1 GHz	6, 7	B		Yes		Yes
ProLiant ML350 G2	6	F	Yes (see note 1)			Yes

Server	PCI Slot	Virtual Power Button Cable (see legend)	USB Virtual Floppy/ CD	AC Power Adapter (see note 3)	Keyboard Mouse Adapter Cable	Disable Onboard Video Using the Dip Switch
ProLiant ML350 G3	5	F	Yes			
ProLiant ML370	1, 2	A		Yes	Yes	
ProLiant ML370 G2	6	F	Yes (see note 1)			
ProLiant ML370 G3	6	F	N (see note 2)			
ProLiant ML530	1	A		Yes	Yes	
ProLiant ML530 G2	7	F	Yes			
ProLiant ML570	6	A		Yes	Yes	
ProLiant ML570 G2	7	F	Yes			
ProLiant ML750	1, 2, 3, 4	E		Yes	Yes	
ProLiant 7000 Xeon 500 MHz	3, 4, 5, 6	None		Yes	Yes	
ProLiant 8000 Xeon	1, 2, 3, 4	E		Yes	Yes	
ProLiant 8500 Xeon (servers shipped with 550-MHz processors with configuration codes CL61, CL64, BX71, or BX72)	7, 8, 9	D		Yes	Yes	
ProLiant 8500 Xeon (server shipped with 700-MHz and higher processors)	7, 8, 9	A		Yes	Yes	

Server	PCI Slot	Virtual Power Button Cable (see legend)	USB Virtual Floppy/CD	AC Power Adapter (see note 3)	Keyboard Mouse Adapter Cable	Disable Onboard Video Using the Dip Switch
<p>Legend: Virtual Power Button cable descriptions and part numbers</p> <p>A = P/N 160011-001 (4-pin cable) ships with the RILOE II kit. B = P/N 177634-001 (16-pin cable) ships with the RILOE II kit. C = P/N 177634-002 (16-pin cable) ships with ProLiant DL360 servers. D = P/N 195254-B21 (split 4-pin cable) available as a spare kit P/N 195724-001. E = P/N 162816-001 (split 4-pin cable) available as a spare kit P/N 166655-001. F = P/N 241793-010 (30-pin cable) ships with the RILOE II kit. G = P/N 216373-001 (16-pin to 13-pin cable) ships with the ProLiant DL760.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. The USB Virtual Floppy/CD will work under an operating system that natively supports USB. The USB Virtual Floppy/CD will not work until the operating system and appropriate device drivers are loaded. More information can be found at the ProLiant Support Page (http://h18013.www1.hp.com/products/servers/platforms/usb-support.html). 2. RILOE II USB Virtual Media is not supported on the ProLiant DL380 G3, 2.4 GHz; ProLiant DL380 G3, 2.8 GHz; ProLiant ML370 G3, 2.4 GHz; and ProLiant ML370 G3, 2.8 GHz. The RILOE II non-USB-based Virtual Floppy feature, which requires loading the floppy image to the RILOE II, is supported. For more information, refer to the HP website (http://h18000.www1.hp.com/products/servers/management/riloe2/virtualmedia.html). 3. All servers support the keyboard/mouse external cable as well as the AC power adapter. However, the default configuration always relies on having the Remote Insight cable connected so RILOE II can provide the Virtual Power Button, Virtual Floppy, and Virtual Media USB applet. Whenever the 16- or 30-pin Remote Insight cables are used, do not use the external cables. 						

Preparing to Install the RILOE II

1. Locate the documentation provided with the server for server-specific slot information.
2. Refer to the Server PCI Slot and Cable Matrix (on page 16) to select an unused PCI slot, appropriate cables, and video switch settings and to determine supported features for the server.

3. Be sure the server has the latest system ROM revision. For instructions on updating the system ROM of your server, refer to the server documentation. To download the latest server ROM upgrade for your server, go to the HP website. (<http://www.compaq.com/support/files/server>)

Installing the RILOE II in the Server



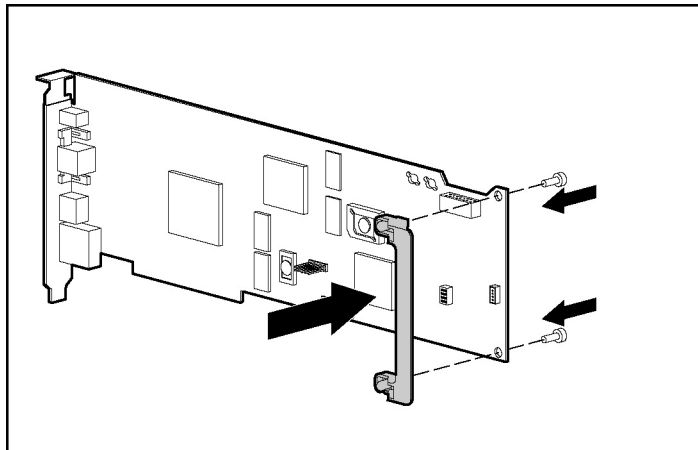
CAUTION: To prevent damage to electric components, properly ground the server before beginning any installation procedure. Improper grounding can cause electrostatic discharge.

To install the RILOE II in the server:

1. If you are installing the RILOE II in a shared EISA/PCI slot, attach the PCI extender bracket to the board before installing the board in the server. This bracket is not needed when installing the board in PCI-only slots.



CAUTION: The screws shown are self-tapping, and some amount of force is required for installation. Use caution when installing the screws to prevent damage to the RILOE II.



The extender should extend past the right edge of the board.

2. If you are installing the RILOE II in a server that was previously configured with a RILOE, and the server is running a Windows® based operating system, you must upgrade the systems management driver with the Advanced System Management Driver found on the SmartStart 6.2 or later CD or at the HP website (<http://www.compaq.com/support/files/server>). This driver must be installed before installing the RILOE II in the server.
3. Power down the server and disconnect all power cords to remove power from the server.
4. Disassemble the server.
NOTE: Refer to the server documentation for instructions on disassembling the server to install an option board.
5. Select an appropriate PCI slot (on page 16). **RILOE II may be server-slot specific.**
6. Loosen the retaining screw and remove the slot cover. If the RILOE II is being installed in a hot-plug slot, release the slot lever and remove the slot cover.
7. Press the RILOE II board firmly into the slot.
8. Secure the board in place with the retaining screw, or close the hot-plug slot lever, as appropriate.
9. Disable the onboard video, if required for the server. Refer to the Server PCI Slot and Cable Matrix (on page 16) for details on your server model.

Installing Internal Cables

The following describes how to install RILOE II internal cables.

Installing a Virtual Power Button Cable (4-pin)

To enable the Virtual Power Button feature of the RILOE II on servers that use a four-pin connector on the server system board, install the Virtual Power Button cable (4-pin) (PN 160011-001):

1. Power down the server and disconnect all power cords to remove power from the server.

2. Connect the four-pin connector on the cable to the Virtual Power Button cable connector, located on the rear of the RILOE II.
3. Connect the four-pin connector on the other end of the cable into the four-pin connector on the server system board.

IMPORTANT: Be sure that you do not connect the Virtual Power Button cable to the speaker connection on the server system board.

NOTE: For detailed instructions on the location of the connector on the server system board, refer to the documentation provided with the server.

4. Refer to the server documentation to reassemble the server.

Installing a Remote Insight Cable (16-pin)

To install the Remote Insight cable (16-pin) (P/N 177634-001):

1. Power down the server and disconnect all power cords to remove power from the server.
2. Connect the 16-pin connector on the Remote Insight internal cable to the Remote Insight connector (16-pin), located on the edge of the board.
3. Connect the 16-pin connector on the other end of the Remote Insight internal cable to the 16-pin Remote Insight connector on the server system board.

NOTE: For detailed instructions on the location of the connector on the server system board, refer to the documentation provided with the server.

4. Refer to the server documentation to reassemble the server.

Installing a Remote Insight Cable (30-pin)

To install the Remote Insight cable (30-pin) (P/N 241793-010):

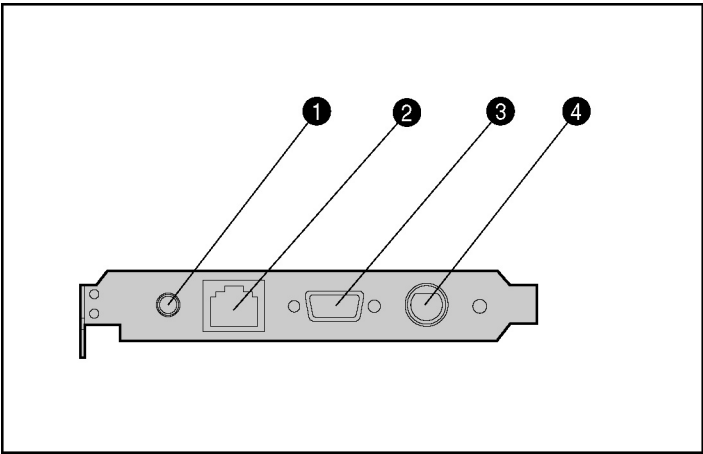
1. Power down the server and disconnect all power cords to remove power from the server.
2. Connect the 30-pin connector on the Remote Insight cable to the Remote Insight connector (30-pin), located on the edge of the board.
3. Connect the 30-pin connector on the other end of the Remote Insight cable to the 30-pin Remote Insight connector on the server system board.

NOTE: For detailed instructions on the location of the connector on the server system board, refer to the documentation provided with the server.

4. Refer to the server documentation to reassemble the server.

Connecting External Cables to the RILOE II

After you have installed the RILOE II in your server, connect the external cables.

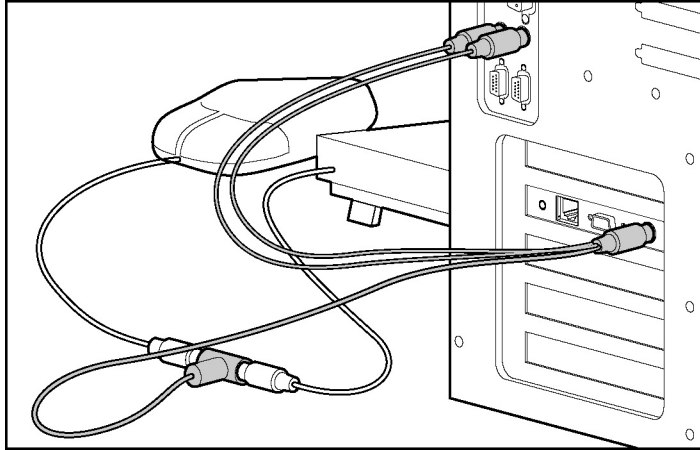


Item	Description
1	AC power adapter connector
2	LAN connector
3	Video connector
4	Keyboard/mouse connector

Keyboard/Mouse Adapter Cable Connection

The keyboard and mouse signals must pass through the RILOE II. For more information, refer to the "Keyboard/Mouse Adapter Cable Configuration" section ("Keyboard/Mouse Adapter Cable Configuration" on page 14).

Some servers use a Remote Insight cable for the keyboard and mouse and do not require you to use the keyboard/mouse adapter cable. Refer to the Server PCI Slot and Cable Matrix (on page 16) to see if your server requires the keyboard/mouse cable.



To connect the keyboard/mouse adapter cable for servers that require this cable:

1. Disconnect the keyboard and mouse cables from the server.
2. Connect the keyboard and mouse cables to the color-coded T-shaped keyboard/mouse connector of the RILOE II keyboard/mouse adapter cable, as shown.
3. Connect the color-coded plugs of the keyboard mouse adapter cable to the keyboard and mouse connectors of the server.
4. Connect the black plug of the keyboard/mouse adapter cable to the keyboard/mouse connector of the RILOE II.

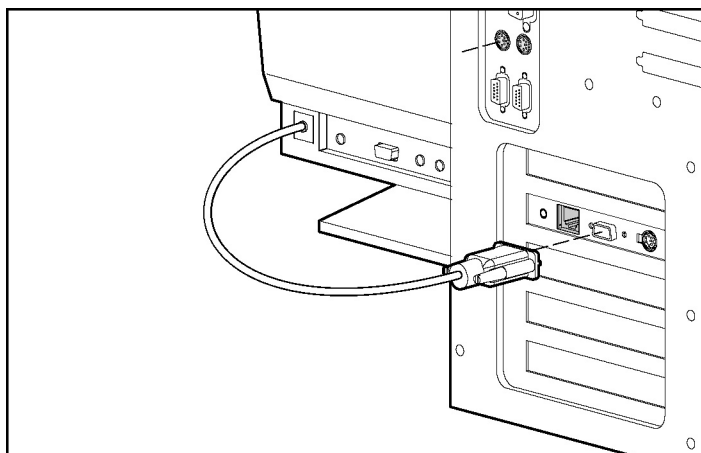
Headless Server Deployment

For headless server deployment, you do not have to connect the physical keyboard or mouse device to the server. However, to have remote keyboard and mouse capabilities, you must use the keyboard/mouse adapter cable provided with the RILOE II, the Remote Insight cable (16-pin), or Remote Insight cable (30-pin).

Monitor Cable Connection

To use a monitor with a server that has the RILOE II installed, connect the monitor to the RILOE II video connector.

RILOE II incorporates the ATI RAGE XL video controller to ensure that a compatible controller is available for Remote Console operation. Adding RILOE II to a Windows® server replaces the embedded video controller of the server with the ATI RAGE XL video controller. Windows® loads a generic video driver to support the RILOE II video. The generic video driver works but lacks support for the ATI RAGE XL features.



To connect the monitor signal cable:

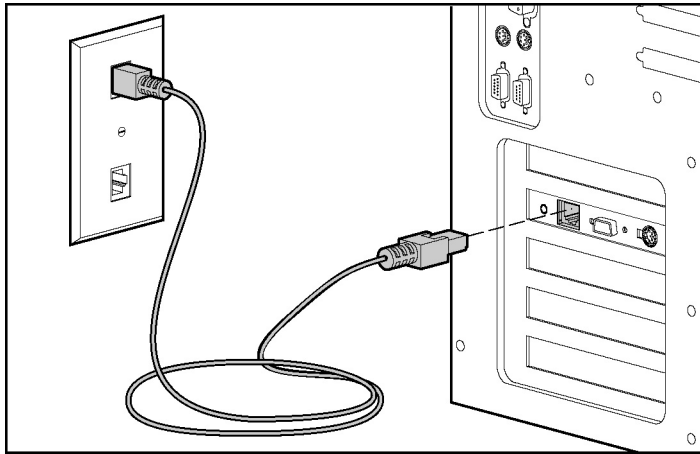
1. Disconnect the monitor signal cable from the server monitor connector.
2. Connect the monitor signal cable to the video connector on the RILOE II.
3. If you are installing the RILOE II in a server running Windows NT® 4.0, install the latest ATI RAGE XL driver from the PSP for Microsoft® Windows NT® 4.0 located on the SmartStart 6.2 CD.

Some servers require that the onboard video be disabled for the RILOE II to work properly. Refer to the Server PCI Slot and Cable Matrix (on page 16) for a list of servers that have this requirement. For instructions on disabling the onboard video, refer to the documentation provided with the server.

For headless server deployment, do not connect a monitor to the server or to the Remote Insight Lights-Out Edition II video connector.

LAN Cable Connection

To access the RILOE II using TCP/IP across a 10-MB or 100-MB Ethernet network, connect the LAN cable from the LAN connector on the RILOE II to an active network jack.



The green LED indicator that is located close to the AC power adapter connector indicates the speed of the connection. If the LED indicator is on, then the connection is 100 Mb; if the LED is off, then the connection is 10 Mb.

The green LED indicator that is located close to the video connector indicates a link. If the LED is on, then a link is established.

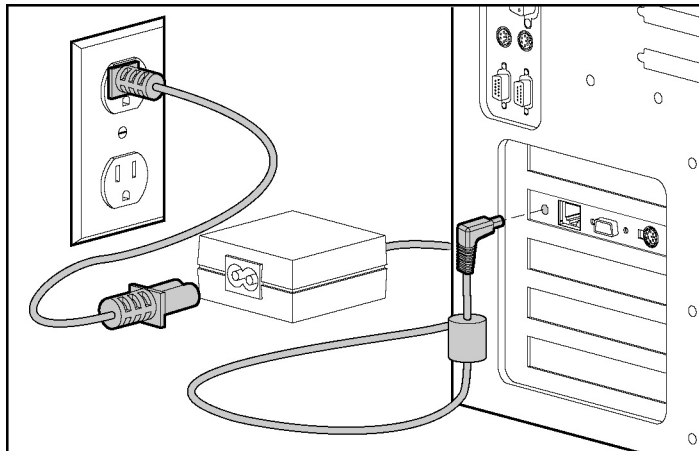
AC Power Adapter Connection

When the AC power adapter is connected, the RILOE II has access to power that is independent of main server power. To increase server manageability, HP recommends connecting the AC power adapter to a power circuit separate from that of the server.

HP ProLiant CL, DL, and ML servers that use the Remote Insight cable (16- or 30-pin) do not require the use of the AC power adapter.

The HP ProLiant ML330, ProLiant ML330e, and ProLiant DL760 servers require the installation of the power adapter included in the RILOE II kit. For detailed information, refer to the documentation provided with the server. For a complete list of servers that require the AC power adapter, refer to the HP website (<http://www.hp.com/servers/lights-out>).

Connect the AC power adapter cable as shown.



Powering Up the Server

1. Plug the AC main power cord into the server and then into a grounded AC outlet.



WARNING: To reduce the risk of electric shock or damage to the equipment:

- **Disconnect power from the system by unplugging all power cords from the power supplies.**
 - **Do not disable the power cord grounding plug. The grounding plug is an important safety feature.**
 - **Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.**
2. Turn on any peripheral devices attached to the server.
 3. Turn on the server.

RILOE II Configuration Parameters

In This Section

RILOE II Configuration Table 29

User Settings..... 33

Global Settings 34

Network Settings 35

SNMP Settings 37

Directory Settings 38

RILOE II Configuration Table

Record your settings in the “Your Value” column of the table.

RILOE II Configuration Parameter	Default Value or Setting	Your Value
User Settings		
User Name	Administrator	
Login Name	Administrator	
Password	See network settings tag	
Enforced Client IP Address	None, IP Address, IP Range, or DNS Name	
Administer User Access	No	
Configure RILOE II Access	No	
Login Access	Yes	
Remote Console Access	Yes	
Remote Server Reset and Power Button Access	Yes	
Virtual Media Access	Yes	
Global Settings		
Session Timeout (Minutes)	15	
ROM Configuration Utility (F8)	Enabled	
Emergency Management Services	Disabled	
Bypass reporting of external power cable	Disabled	
Remote Console Port Configuration	Enabled	
Remote Access with Pocket PC	Disabled	
Remote Console Data Encryption	Enabled	
SSL Encryption Strength	128-bit (High)	

RILOE II Configuration Parameter	Default Value or Setting	Your Value
User Settings		
Current Cipher	RC4-MD5 with 128-bit Encryption	
Remote Insight HTTP Port_____	80	
Remote Insight HTTPS Port	443	
Remote Insight Remote Console Port	23	
Host Keyboard	Disabled	
Level of Data Returned	Medium	
Network Settings		
Transceiver Speed Autoselect	Yes	
Speed	Autoselect	
Duplex	Autoselect	
Enable DHCP	Yes	
Use DHCP Supplied Gateway	Yes	
Use DHCP Supplied DNS Servers	Yes	
Use DHCP Supplied WINS Servers	Yes	
Use DHCP Supplied Static Routes	Yes	
Register with WINS Server	Yes	
IP Address	0.0.0.0 (Set by DHCP)	
Gateway IP Address	0.0.0.0 (Set by DHCP)	
Subnet Mask	255.255.255.0	

RILOE II Configuration Parameter	Default Value or Setting	Your Value
User Settings		
Remote Insight Lights-Out Edition II Board Name	RILOE II Serial Number	
Domain Name		
DHCP Server	0.0.0.0	
Primary DNS Server IP Address	0.0.0.0	
Secondary DNS Server IP Address	0.0.0.0	
Tertiary DNS Server IP Address	0.0.0.0	
Primary WINS Server IP Address	0.0.0.0	
Secondary WINS Server IP Address	0.0.0.0	
Static Route #1 (destination, gateway)	0.0.0.0, 0.0.0.0	
Static Route #2 (destination, gateway)	0.0.0.0, 0.0.0.0	
Static Route #3 (destination, gateway)	0.0.0.0, 0.0.0.0	
Insight Manager Web Agent Address (Management Agents)	http:// _____:2301	
SNMP Settings		
SNMP Trap Destination(s)	Enter up to three IP addresses	
Forward Host OS Generated SNMP Traps	No	
Send HP Remote Insight Board SNMP Traps	No	
Directory Settings		

RILOE II Configuration Parameter	Default Value or Setting	Your Value
User Settings		
Directory Authentication	Disabled	
Directory Server Address	0.0.0.0	
Directory Server LDAP Port	636	
LOM Object Distinguished Name		
LOM Object Password		
Directory User Context 1		
Directory User Context 2		
Directory User Context 3		

User Settings

The **User Settings** screen allows users to access the RILOE II. Up to 25 users can be specified. User configurations can be added, deleted, or modified.

User Name—This is the user's name as it will be displayed in the user list and event log. It is not the name used to log in. The maximum length of the user name is 48 characters.

Login Name—This is a case-sensitive name that the user must provide to log in to the RILOE II. The maximum length of the login name is 40 characters.

Password—This is a case-sensitive password that the user must provide to log in to the RILOE II. The password has a minimum length of 8 characters and a maximum of 40 characters. You must enter the password twice for verification.

Enforced Client IP Address—The default setting is **none**. You can change this setting to a specific IP address, an IP address range, or a DNS name. Client logon attempts that do not meet the specified requirements will be rejected.

NOTE: A user with administrator status can remotely add, delete, and modify the configurations of other Remote Insight users.

Administer User Access—This setting allows the user to administer accounts. The user can modify their account settings, modify other user account settings, add users, and delete users.

Configure RILOE II Access—This setting allows the user to make changes to the board settings, such as network settings, global settings, and to clear the event log.

Login Access—This setting grants or denies the user login access. Login access can be used to create a user who is a service provider and who receives alerts from the board but does not have login access to the RILOE II.

Remote Console Access—This setting gives the user access to the remote host server console.

Remote Server Reset and Power Button Access—This setting grants the user the ability to remotely reset the host server using the RILOE II board.

Virtual Media Access—This setting gives the user permission to access the Virtual Floppy and Virtual CD-ROM functionality of the Remote Insight board.

Global Settings

Session Timeout (minutes)—Controls how long a session can remain inactive before the Remote Insight board forces the user to log in again. The default is 15 minutes and can be set up to 120 minutes.

ROM Configuration Utility (F8)—Enables or disables the use of the F8 key during POST to access the Remote Insight ROM-Based Configuration Utility.

Emergency Management Services—Enables or disables the use of Windows® 2003 Server EMS through the RILOE II.

Bypass reporting of external power cable—Enables or disables the RILOE II board to report to the operating system agent to which the external power cable is connected.

Remote Console Port Configuration—Enables or disables configuring of the port address.

Remote Access with Pocket PC—Enables or disables access to the RILOE II from a Pocket PC.

Remote Console Data Encryption—Enables encryption of Remote Console data. If using a standard telnet client to access the RILOE II board, this setting must be **Disabled**.

SSL Encryption Strength—Allows you to set a 40-bit or 128-bit cipher strength. The most secure is 128-bit (High).

Current Cipher—Displays the encryption algorithm currently being used to protect data during transmission between the browser and the RILOE II.

Remote Insight HTTP Port—Allows you to change this setting, if required by your environment.

Remote Insight HTTPS Port—Allows you to change this setting, if required by your environment.

Remote Insight Remote Console Port—Allows you to change this setting, if required by your environment.

Host Keyboard—Enables or disables the host keyboard.

Level of Data Returned—Allows you to select the amount of data that is returned to an HTTP identification request from Insight Manager 7.

Network Settings

Transceiver Speed Autoselect—Detects the interface speed and sets the interface to operate at 10 Mbps or 100 Mbps and at half or full duplex. If necessary, this parameter can be set to manual to allow manual adjustment of speed and duplex settings.

Speed—Assigns 10 Mbps or 100 Mbps connect speeds if the Transceiver Speed Autoselect is not enabled.

Duplex—Assigns half or full duplex to the NIC if the Transceiver Speed Autoselect is not enabled.

If DHCP is enabled, the settings **Use DHCP Supplied Gateway**, **Use DHCP Supplied DNS Servers**, **Use DHCP Supplied WINS Servers**, and **Use DHCP Supplied Static Routes** are also enabled. If DHCP has been disabled, these settings may have to be assigned.

Enable DHCP—To disable DHCP, use the RBSU F8 option, a supported browser, or an XML script. Refer to "Configuring the RILOE II" ("Configuring the RILOE II" on page 39) for setup instructions.

NOTE: If you disable DHCP ("Disabling DNS/DHCP" on page 40), you will have to manually configure the network settings using RBSU F8.

Use DHCP Supplied Gateway—Designates the RILOE II to automatically use the DHCP address assigned by the DHCP server.

Use DHCP Supplied DNS Servers—Designates the RILOE II to automatically use the DHCP address assigned by the DHCP server.

Use DHCP Supplied WINS Servers—Designates the RILOE II to automatically use the DHCP address assigned by the DHCP server.

Use DHCP Supplied Static Routes—Designates the RILOE II to automatically use the DHCP address assigned by the DHCP server.

Register with WINS Server—Designates the RILOE II to automatically register its name with the WINS server.

IP Address—Allows you to assign a static IP address to the Remote Insight NIC on your network, if DHCP is not being used.

Gateway IP Address—Assigns the IP address of the network router that connects the Remote Insight subnet to another subnet where the management PC resides. This field may be filled in if DHCP is enabled.

Subnet Mask—Assigns the subnet mask for the default gateway. This field may be filled in if DHCP is enabled.

Remote Insight Lights-Out Edition II Board Name—Allows you to assign a unique name for the RILOE II board.

Domain Name—Allows you to assign the name of the domain in which the RILOE II will participate.

DHCP Server—Allows you to enter the DHCP server address.

Primary DNS Server IP Address—Assigns a unique DNS server IP address on your network.

Secondary DNS Server IP Address—Assigns a unique DNS server IP address on your network.

Tertiary DNS Server IP Address—Assigns a unique DNS server IP address on your network.

Primary WINS Server IP Address—Assigns a unique WINS server IP address on your network.

Secondary WINS Server IP Address—Assigns a unique WINS server IP address on your network.

Static Routes #1, #2, #3 (destination, gateway)—Use one of these parameters to assign the appropriate static route destination and gateway IP address on your network. The default IP values are 0.0.0.0 and 0.0.0.0, where the first IP address corresponds to the destination IP, and the second IP address corresponds to the gateway IP.

Insight Manager Web Agent Address—Allows you to specify the IP address for the HP Management Web agents that the RILOE II will be configured to use.

SNMP Settings

SNMP Trap Destination(s)—Allows you to enter any valid IP address or DNS name you want to receive SNMP trap alert information. The maximum value for each address is 50 characters.

Forward Host OS Generated SNMP Traps—Enables or disables forwarding of host operating system generated SNMP traps.

Send HP Remote Insight Board SNMP Traps—Enables or disables sending of RIB SNMP trap information.

Directory Settings

Directory Authentication—Enables or disables directory authentication.

Directory Server Address—Enables or disables the use of Windows® 2003 EMS through the RILOE II. Enter the Directory Server DNS name or DNS IP address. HP recommends using a DNS name or multi-host DNS name. If an IP address is used, the directory will not be available if that server is down.

Directory Server LDAP Port—Sets the port number used to connect to the directory server. The secured LDAP port number is 636.

LOM Object Distinguished Name—Specifies the unique name for the RILOE II card in the directory. LOM Object Distinguished Names are limited to 256 characters.

LOM Object Password—Specifies the password for the RILOE II object to access the directory. LOM Object Passwords are limited to 40 characters.

Directory User Context 1, Directory User Context 2, Directory User Context 3—Allows you to specify one, two, or three searchable paths used to locate the user when the user is trying to authenticate using directory services. Directory User Contexts are limited to 128 characters each.

Configuring the RILOE II

In This Section

Configuration Options	39
Installing RILOE II Device Drivers	41
Optimizing Performance for the Remote Console.....	45

Configuration Options

After you have installed the RILOE II in the server and have made all necessary peripheral connections, you must configure the RILOE II.

The RILOE II offers two configuration options:

- **Remote Setup**
Allows the user to configure the RILOE II from the Remote Console through a browser interface.
- **ROM-Based Setup Utility F8 (RBSU F8)**
Allows the user to set up the RILOE II during server boot-up. RBSU is useful for setting up servers that do not use DNS/DHCP. The RBSU is available every time the server is booted, but you cannot run it remotely.

Regardless of the configuration method used, be aware of the configuration parameters that are involved. Use the configuration table ("RILOE II Configuration Table" on page 29) to determine what parameters you need to set up the board. Leave parameters set to their default values unless you know that they should be changed for your environment. Before starting RBSU, record the values for your installation in the configuration table ("RILOE II Configuration Table" on page 29).

Some servers contain DIP switches on the system board to control certain security settings. Before beginning configuration, if the server is equipped with a Configuration Lock Switch, set this switch to off (unlocked). See the documentation or hood labels that shipped with the server for more information about the Configuration Lock Switch. When configuration is complete, return the switch to the on (locked) position.

Remote Setup

Remote setup allows you to configure the RILOE II from the Remote Console.

1. Using a standard Web browser, access the RILOE II from a remote network client and provide the default DNS name, user name, and password on the network settings tag supplied with the board.
2. When you successfully log on to the RILOE II, you will be able to change the default values of the network and user settings through the Web browser interface of the RILOE II. You will also be able to install operating system drivers and Insight Manager agents on the remote host server using the graphical Remote Console.

ROM-Based Setup Utility F8

RBSU F8 allows you to set up the RILOE II during server boot up. However, RBSU is **not** accessible through the RILOE II Remote Console. It can only be accessed locally at the server.

1. Restart or power up the server.
2. Press the **F8** key to enter RBSU when the cursor flashes and the RILOE II prompt displays on the screen.
3. Make and save any necessary changes to the RILOE II.
4. Exit the RBSU.

Disabling DNS/DHCP

HP recommends using DNS/DHCP with the RILOE II to simplify installation. In the event that DNS/DHCP cannot be used, use the following procedure to disable DNS/DHCP and configure the network settings:

1. Restart or power up the server.
2. Press the **F8** key to enter the RBSU when the cursor flashes and the RILOE II prompt displays on the screen.
NOTE: Use the arrow keys to highlight selections.
3. Select **Network, DNS/DHCP**, and press the **Enter** key. The **Network Autoconfiguration** screen displays.
4. Select **DHCP Enable** and press the space bar to turn off DHCP. Be sure that **DHCP Enable** is set to off and press the **F10** key to save the changes.
NOTE: It will take a few minutes for the board to save the network changes and to reset.
5. Select **Network, NIC, and TCP/IP**, and press the **Enter** key. The **Network Configuration** screen displays.
6. Configure your network settings.
7. Press the **F10** key to save the changes.
NOTE: It will take a few minutes for the board to save the network changes and to reset.
8. Exit the RBSU.

SmartStart Setup of RILOE II

Use RBSU F8 during SmartStart to configure the RILOE II. Configuring the RILOE II using SmartStart is not an option.

Installing RILOE II Device Drivers

A majority of the RILOE II functionality is available without any operating system-based software or drivers. Two driver interfaces, however, are provided to the RILOE II management processor.

- The first interface is for the RILOE II Advanced System Management Driver. This driver is also known as the Health Driver and provides system management support, including monitoring of server components, event logging, and support for the HP Management Agents.

- The second interface is for the RILOE II Management Interface Driver. This driver allows system software and SNMP Insight Agents to communicate with the RILOE II.

The following sections provide instructions for installing RILOE II drivers for:

- SmartStart:
 - Microsoft®
 - Novell
- Management CD:
 - Linux

Refer to the HP website (<http://www.hp.com/support>) for the latest versions of these drivers.

Microsoft Windows NT, Windows 2000, and Windows 2003 Server Driver Support

The device drivers that support the RILOE II are part of the PSP that is located on the HP website (<http://www.hp.com/support>) or on the SmartStart CD. Before you install the Windows® drivers, obtain the Windows® documentation and the latest Windows® Service Pack.

Relevant File

The CPQCIDRV.SYS file provides the RILOE II Management Interface Driver support.

Installing or Updating the RILOE II Drivers

The PSP for Microsoft® Windows® products includes an installer that analyzes system requirements and installs all drivers.

The PSP is available on the HP website (<http://www.hp.com/support>) or on the SmartStart CD.

NOTE: If you are updating the RILOE II drivers, be sure that the RILOE II is running the latest version of the RILOE II firmware. The latest version can be obtained as a Smart Component from the HP website (<http://www.hp.com/servers/lights-out>).

To install the drivers in the PSP, download the PSP from the HP website (<http://www.hp.com/support>), run the SETUP.EXE file included in the download, and follow the installation instructions. For additional information about the PSP installation, read the text file included in the PSP download.

Novell NetWare Server Driver Support

The device drivers required to support RILOE II are part of the PSP that is located on the SmartStart CD and the HP website (<http://www.hp.com/support>).

Relevant File

The CPQRIB.NLM file provides the RILOE II Management Interface Driver support.

Installing or Updating the RILOE II Drivers

The PSP for Novell NetWare includes an installer that analyzes system requirements and installs all drivers. The PSP is available on the HP website (<http://www.hp.com/support>) and on the SmartStart CD.

NOTE: If you are updating the RILOE II drivers, be sure that the RILOE II is running the latest version of the RILOE II firmware. The latest version can be obtained as a Smart Component from the HP website (<http://www.hp.com/servers/lights-out>).

To install the drivers, download the PSP from the HP website (<http://www.hp.com/support>) to a NetWare server. After the PSP has been downloaded, follow the NetWare component installation instructions to complete the installation. For additional information about the PSP installation, read the text file included in the PSP download.

NOTE: When using NetWare 6.X, a RAGE-IIC video driver is provided by the operating system and should be used for best results.

Red Hat Linux and SuSE Linux Server Driver Support

The device drivers required to support RILOE II for Red Hat Linux and SuSE Linux are located on the Management CD or on the HP website (<http://www.hp.com/support>).

Relevant Files

You can download the PSP files containing the RILOE II driver, the foundation agents, and health agents from the HP website (<http://www.hp.com/support>). The instructions on how to install or update the RILOE II driver are available on the website. The HP Management Agents for Linux are:

- ASM package 6.20.0 (hpsm) which combines the health driver, IML viewer, foundation agents, health agent, and standard equipment agent into one package.
- RSM package 6.20.0 (hprsm) which combines the RIB driver, rack daemon, RIB agent, and rack agent into one package.

These packages cannot upgrade previous versions of the agents and drivers. Remove previous agents before applying the new agents. Uninstall the agents and drivers by using the following commands:

- `rpm -e cpqgrid`
- `rpm -e cmanic`
- `rpm -e cmastor`
- `rpm -e cmasvr`
- `rpm -e cmafdtn`
- `rpm -e cpqhealth`

Download and install the HP Linux Management Agents. An example of the package name is `hpsm-6.20.0-11.Redhat7_3.i386.rpm`

Use the following commands to load the packages:

```
rpm -ivh hpsm-d.vv.v-pp.Linux_version.i386.rpm
rpm -ivh hprsm-d.vv.v-pp.Linux_version.i386.rpm
```

where: *d* is the Linux distribution and version and
vv.v-pp are version numbers.

For additional information, refer to the Software and Drivers website (<http://www.hp.com/support>).

If necessary, you can uninstall, stop, or start the RILOE II by using the following commands:

- Uninstall
`rpm -e cpqgrid`
- Stop
`/etc/rc.d/init.d/cpqgrid stop`
- Start
`/etc/rc.d/init.d/cpqgrid start`

For additional information, refer to the Software and Drivers website (<http://www.hp.com/support>).

Optimizing Performance for the Remote Console

Ideally, the remote server operating system display resolution should be the same resolution, or smaller, than that of the browser computer. Higher resolutions transmit more information, slowing the overall performance.

Browser Settings

Use the medium text size to optimize performance.

The following browser versions are supported:

- Microsoft® Internet Explorer
 - Minimum: Microsoft® Internet Explorer 5.5 with Service Pack 2 for Windows® 95, Windows® 98, Windows NT®, Windows® ME, Windows® 2000, and Windows® XP.
 - Recommended: Microsoft® Internet Explorer 6.0 or later

- Netscape Navigator 7.0

Netscape 7.0 has encryption protocols enabled by default that are not compatible with RILOE II. To turn on the compatible protocols:

- a. Click **Edit** from the menu bar.
 - b. Click **Preferences**.
 - c. Click **Privacy & Security**, and then click **SSL**.
 - d. Deselect both **Enable SSL version 3** and **Enable TLS**. The only SSL version that should be selected is **Enable SSL version 2**.
- Mozilla 1.2.1

Additional browsers, or the browsers mentioned used with different operating systems, may or may not work correctly, depending the specific implementations of the required browser technologies.

Tested Browsers

Browsers that have been tested with the RILOE II include:

- Microsoft® Internet Explorer 6.0 and 5.5 with Service Pack 2
- Netscape 7.0
- Mozilla 1.2.1

Using the RILOE II

In This Section

Operational Overview.....	47
Accessing the RILOE II for the First Time	47
Features of the RILOE II.....	50
Using the Graphical Remote Console to Manage the Host Server.....	51
Troubleshooting the Host Server.....	54
Using Virtual Devices	57
Managing the User and Configuration Settings of the RILOE II.....	68
Resetting the RILOE II to the Factory Default Settings.....	75
Getting Help	75
Integrating the RILOE II with Insight Manager 7	75
Pocket PC Access with the RILOE II.....	78

Operational Overview

During normal operation, the RILOE II passes the keyboard and mouse signals to the server and functions as the primary video controller. This configuration allows the following operations to occur:

- Transparent substitution of a remote keyboard and mouse for the server keyboard and mouse
- Saving of video captures of reset sequences and failure sequences in the RILOE II memory for later replay
- Simultaneous transmission of video to the server monitor and to a Remote Console monitor

Accessing the RILOE II for the First Time

The RILOE II is preconfigured with a default user name, password, and DNS name. A network settings tag with the preconfigured values is attached to the board. Use these values to access the board remotely from a network client using a standard Web browser.

IMPORTANT: For security reasons, HP recommends that you change these default settings after accessing the Remote Insight Lights-Out Edition II for the first time.

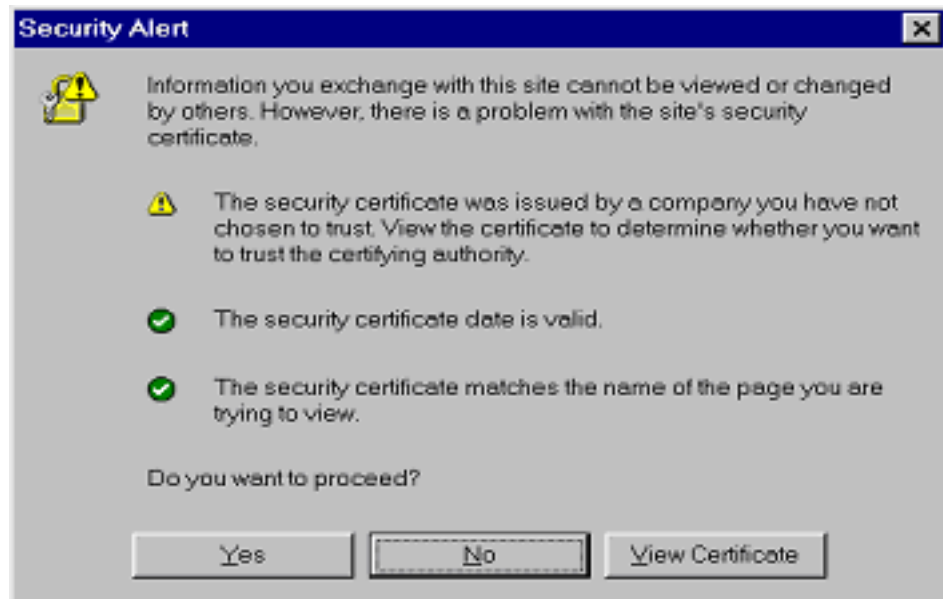
Default values:

- User name: Administrator
- Password: The last eight digits of the serial number
- DNS name: RIBXXXXXXXXXXXX, where the 12 Xs are the MAC address of the RILOE II

NOTE: User names and passwords are case sensitive.

To access the RILOE II for the first time:

1. Enter the RILOE II IP address or DNS name in the address bar of the Web browser. A **Security Alert** window is displayed.



2. Perform one of the following actions:
 - Click **Yes** to continue to the login screen of the RILOE II.
 - Click **No** to return to the **Welcome** screen of the RILOE II.

- Click **View Certificate** to view the certificate information. Installing the certificate to your browser prevents the security alert message from displaying in the future.
- 3. To install the certificate, proceed to step 4. If you do not want to install the certificate, proceed to step 5.

NOTE: Security alert messages redisplay when:

- The certificate is removed from your browser.
- The firmware is upgraded.
- The board is rebooted.
- The name of the Remote Insight Lights-Out Edition II board is changed.

NOTE: The Group Administration function, access to the RILOE II Web interface, and keystroke access to the Remote Console are encrypted with SSL security using a 128-bit RC4 cipher.

- 4. To install the certificate to your browser:
 - a. Click **Install Certificate**. The Certificate Manager Import Wizard starts.
 - b. Click **Next**.
 - c. Click **Next** to allow the browser to automatically select the certificate store when the **Certificate Store** window is displayed.
 - d. Click **Finish** when the **Completing the Certificate Manager Import Manager Wizard** is displayed.
 - e. Click **Yes** to confirm the installation of the certificate when the confirmation window is displayed.
- 5. At the login page, use the default user name and password from the network settings tag and click **OK**.

NOTE: On the RILOE II login page, the maximum length of the **Login Name** is 40 characters for local users. For Directory Services users, the maximum length of the **Login Name** is 256 characters.

After the default user name and password are verified, the **Remote Insight Status Summary** screen is displayed.

The **Remote Insight Status Summary** provides general information about the RILOE II, such as the user currently logged on, server name and status, Remote Insight IP address and name, and latest log entry data. The summary home page also shows whether the RILOE II has been configured to use HP Web-based Management and Insight Management Web agents.

Features of the RILOE II

The RILOE II screen displays the following tabs:

- **System Status**

This section provides information about the server and the RILOE II. The information includes server status, RILOE II status, Survey information, the Remote Insight Event Log, and the Integrated Management Log.

- **Remote Console**

This section gives you access to the Remote Console and allows you to define keystroke sequences that are transmitted to the remote host server at the press of a hot key. It also provides reset sequence playback and Windows® 2003 EMS access.

- **Virtual Devices**

This section provides remote Virtual Power Button, power cycle capabilities, remote reset capabilities, Virtual Floppy Drive, Virtual Floppy Drive USB, and Virtual CD Drive USB.

- **Administration**

This section allows you to manage individualized settings for users, SNMP alerts, the network environment, global security, certificates, and directory services settings. This section also includes an option that allows you to upgrade the RILOE II firmware.

- **Help**

Each screen for the RILOE II provides help screen information for the features listed on the screen.

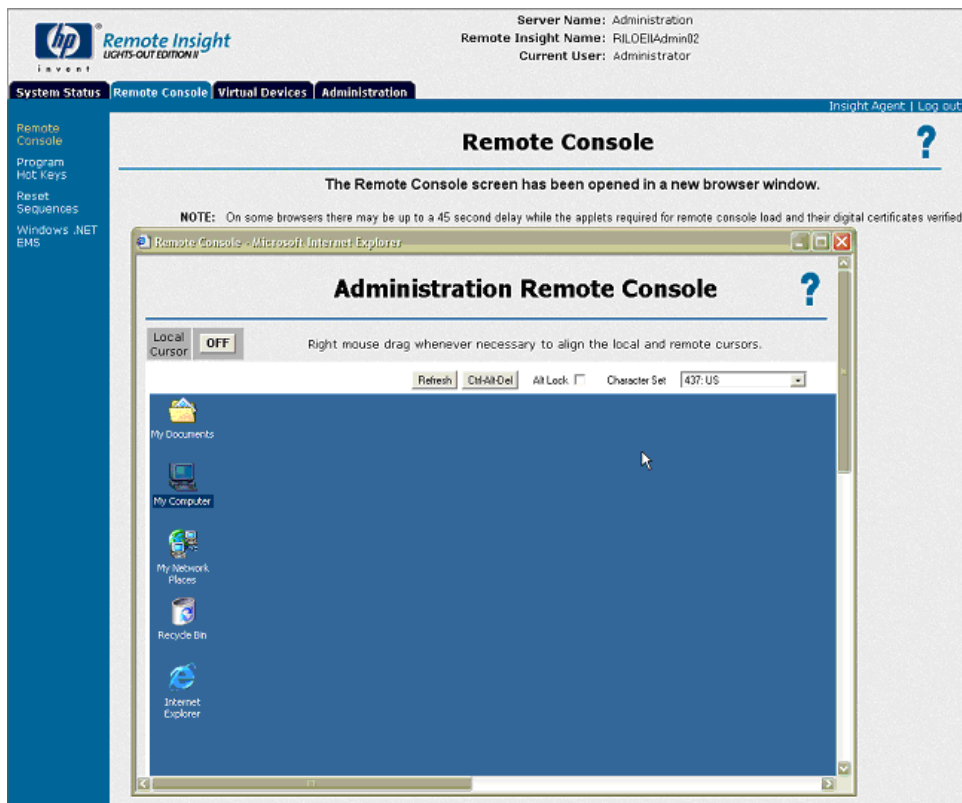
Using the Graphical Remote Console to Manage the Host Server

The Remote Console feature of the RILOE II redirects the host server console to the network client browser, providing full text and graphical mode video, keyboard, and mouse access to the host server.

With the Remote Console, you have complete control over a host server as if you were in front of it. You can access the remote file system and the network drives. The Remote Console allows you to change hardware and software settings of the host server, install applications and drivers, change host server screen resolution, and gracefully shut down the host system.

With the Remote Console, you can observe POST boot messages as the host server restarts and initiate ROM-based setup routines to configure the hardware of the host server. When installing operating systems remotely, the graphical Remote Console lets you view and control the host server screen seamlessly throughout the installation process.

NOTE: If the server has a UID LED and it has the Remote Insight cable (30-pin) installed, the LED will flash during a Remote Console session.



Using Enhanced Features of the Remote Console

Local Cursor

Local (single) cursor mode presents a single mouse cursor during a Remote Console session. Synchronization of two cursors is eliminated, making navigation easier in the Remote Console window. Local cursor mode is the default setting.

The dual cursor mode uses two mouse cursors in the Remote Console window to represent the host server mouse cursor and the local client mouse cursor. The local client cursor is seen as a crosshair in the Remote Console window.

To switch to dual cursor mode, click **OFF** next to **Local Cursor**. To return to single cursor mode, click **ON** next to **Local Cursor**.

Refresh

There may be instances when the Remote Console screen is not displaying the latest data. Click **Refresh** to force the RILOE II to repaint the screen.

Ctl+Alt+Del

Click **Ctl+Alt+Del** to log on to Windows NT®, Windows® 2000, and Windows® Server 2003.

Windows® 2003 EMS Console

The EMS console provides a text-based screen to access the host server. The EMS console option is available for all ProLiant DL, ML, and BL servers with the latest server ROM upgrade and using Windows® Server 2003.

Alt Lock

The **ALT** key on the local keyboard is not passed from the client to the host server. To simulate pressing the **ALT** key on the host server, select **ALT Lock**.

Character Set

Use this option to change the default character set used by the Remote Console and the type of operating system to which the Remote Console is connected. Modifying the Remote Console settings ensures proper operation of the Remote Console and correct display of colors and characters.

Remote Console Hot Keys

The Remote Console hot keys feature allows you to define up to six multiple-key combinations to be assigned to each hot key. When a hot key is pressed in the Remote Console, the defined key combination (all keys pressed at the same time) is transmitted to the host server.

To define a Remote Console hot key:

1. Click **Program Hot Keys**, located on the **Remote Console** tab.
2. Select the hot key you want to define and use the drop boxes to select the key sequence to be transmitted to the host server at the press of the hot key.
3. Click Save **Hot Keys** when you have finished defining the key sequences.

Troubleshooting the Host Server

The RILOE II provides features for proactive system management and efficient troubleshooting of server problems.

In addition to the Remote Console, you have access to overall server status information, video replay of previous server resets, and other information gathered by the Survey utility.

The RILOE II maintains a complete set of logs for troubleshooting server problems. These logs are the Remote Insight Event Log and the Integrated Management Log.

Full integration with Insight Manager 7 provides warning of potential problems through SNMP trap alerts ("Enabling SNMP Alerts" on page 72) displayed on an Insight Manager 7. This integration is achieved by installing and configuring HP Insight agents on the remote server.

Additional Information on the State of the Host Server

The **Server Status** option provides comprehensive status information about the following items:

- Server information
- POST diagnostic results

Video Replays of Previous Server Reset Sequences

The **Reset Sequences** option on the **Remote Console** tab provides video replay of server reset sequences. This option allows you to observe ROM-based POST messages and operating system load messages of previous host server resets, including any error messages displayed by the operating system before a server stops.

IMPORTANT: The reset sequences option requires the use of the Remote Console. You cannot access the Remote Console while replaying the reset sequences. A user cannot use Remote Console if another user is on one of the selected replay sequence pages. Only one user is permitted access to Remote Console at a time. If another user is viewing one of the previous, current, or failed sequence pages, you will receive the following message: "Another user is accessing the Remote Console feature of the Remote Insight Lights-Out Edition II. Only one user is permitted access at a time. Remote Console will automatically start when Remote Console becomes available."

To access video replays of the host server reset sequences:

1. Click **Reset Sequences** on the **Remote Console** tab.
2. Select the desired sequence replay from the following options:
 - **Previous Reset Sequence Replay**—This option allows you to replay the video sequence prior to the most recent host server reset. The video replay displays ROM-based messages and operating system load messages that occurred while starting the remote host server.
 - **Current Reset Sequence Replay**—This option allows you to replay the video sequence of the most recent host server reset. The video replay displays ROM-based messages and operating system load messages that occurred while starting the remote host server.
 - **Failure Sequence Replay**—This option lets you replay the video sequence leading up to the most recent host server reset resulting from a system problem. This video replay includes any error information generated by the operating system prior to the host server problem and subsequent reset.

Information Logs

The **System Status** tab gives you access to two types of information logs that are useful when troubleshooting host server problems:

- **Integrated Management Log (IML)**

The IML allows you to view logged remote server events. Logged events include all server-specific events recorded by the system health driver, including operating system information and ROM-based POST codes.

- **Remote Insight Event Log**

The Remote Insight Event Log ("Event Log Entries" on page 142) is an operating system-independent log that maintains a record of events by date and time. Logged events include major server events, such as a server power outage or a server reset, and Remote Insight events, such as a loose cable or an unauthorized login attempt.

Restarting the Host Server

An administrator can restart the host server by using the options listed on the **Virtual Devices** tab:

- **Turn Server Power ON/OFF**—Turns server power on or off, if the host server Virtual Power Button was enabled.

Clicking **Turn Server Power ON/OFF** is analogous to pressing the physical power button of the host server.

IMPORTANT: Using the **Virtual Power Button** option does not gracefully shut down the host server operating system. For a graceful shutdown of a server operating system, use HP Insight Manager or the Remote Console before using the **Virtual Power Button** option.

- **Power Cycle Server**—Performs a hardware-level cold boot reset and is available regardless of the condition of the host server or the operating system.

To power cycle a host server:

1. Click **Power Cycle Server** on the **Virtual Power** screen. A confirmation screen is displayed, followed by a warning.

2. Click **Confirm** to begin rebooting the host server.

After the host server reboots, a Remote Console session begins, allowing you to observe ROM-based POST messages and operating system load messages.

Using Virtual Devices

With virtual devices, an administrator directs a host server to boot and use a diskette or CD-ROM on the client machine or use an image file from anywhere on the network. Virtual devices eliminate the need to visit a host server to insert and use a diskette or CD-ROM, enabling remote operating system installation and host server ROM updates from a CD or network drive.

Virtual devices allow you to carry out any of the following functions:

- Running User Diagnostics by booting the host server from a diagnostic diskette

NOTE: HP recommends that you first delete the SYSMON2.TM file before using User Diagnostics with the Virtual Floppy Drive.

- Applying ROM updates to remote host servers
- Deploying an operating system or other software from a CD in a client machine to a host server
- Performing disaster recovery of failed operating systems

NOTE: If the server operating system does not support ACPI, using the virtual power button feature of the Remote Insight Lights-Out Edition II will shut down the server immediately and not permit a graceful shutdown.

Virtual Floppy Screen

The **Virtual Floppy** screen provides the status of the Virtual Floppy, the ability to load a Virtual Floppy image, and the ability to change Virtual Floppy settings.

Uploading a Diskette Image to the Remote Server

The **Insert Floppy Image** option allows you to send a diskette image file to the RILOE II on the remote host server. The RILOE II treats the diskette image file as a standard diskette.

The Virtual Floppy Drive was designed and tested with MS-DOS®, Windows® 95, and Windows® 98 bootable diskettes. The Virtual Floppy Drive will work correctly only with an operating system that accesses diskette drives by means of standard BIOS Interrupt 13 calls. The Virtual Floppy Drive is not compatible with protected-paging mode applications such as EMM386.

The external power of the 16- and 30-pin Remote Insight cables must be installed when booting to a Virtual Floppy, otherwise the image will be lost when the server is reset.

NOTE: Image files of diskettes are created and stored locally on the hard drive or on a network drive with the Diskette Image Utility (on page 60). This utility is available for download from the HP website (<http://www.hp.com/servers/lights-out>).

The screenshot shows the HP Remote Insight Lights-Out Edition II Administration web interface. At the top, it displays the HP logo and 'Remote Insight LIGHTS-OUT EDITION II'. Below this, a navigation bar includes 'System Status', 'Remote Console', 'Virtual Devices', and 'Administration'. The 'Administration' tab is selected. On the left, a sidebar lists 'Virtual Power', 'Virtual Floppy', 'Virtual Media', and 'Virtual BIOS'. The main content area is titled 'Virtual Floppy' and contains the 'Insert Virtual Floppy' section. This section explains that the Virtual Floppy allows users to remotely insert a floppy diskette image into the HP Remote Insight Lights-Out Edition II Virtual Floppy Drive. It provides a list of steps to insert a virtual floppy image: 1. Create a floppy diskette image with the HP Diskette Image Utility. 2. Type in the name of the image file below, or use the **Browse...** button to find the file. 3. Press the **Insert Floppy Image** button to upload the file to the HP Remote Insight Lights-Out Edition II virtual Floppy Drive. 4. Change the Virtual Floppy Settings as needed. 5. Reboot the server or continue the current Virtual Floppy session. A note mentions that detailed help and the HP Diskette Image Utility can be found at www.compaq.com/lights-out. Below the text is a form with a label 'Virtual Floppy Image File:', a text input field, and a 'Browse...' button. An 'InsertFloppyImage' button is located below the input field. At the bottom, there is an 'Important Information about the Virtual Floppy Drive' section, which lists supported operations (OS install from a network drive, RomPac firmware updates) and notes that the technology is built upon standard Interrupt 13 BIOS calls and requires an operating system that accesses the floppy drive via Interrupt 13. It also states that the Virtual Floppy Drive is not compatible with protected-paging mode applications such as EMM386.

Server Name: Administration
Remote Insight Name: RILOEIIAdmin02
Current User: Administrator

System Status Remote Console Virtual Devices Administration Insight Agent | Log out

Virtual Floppy

Insert Virtual Floppy

Virtual Floppy allows you to remotely insert a floppy diskette image into the HP Remote Insight Lights-Out Edition II Virtual Floppy Drive.

To insert a virtual floppy image, follow these steps:

1. Create a floppy diskette image with the HP Diskette Image Utility.
2. Type in the name of the image file below, or use the **Browse...** button to find the file.
3. Press the **Insert Floppy Image** button to upload the file to the HP Remote Insight Lights-Out Edition II virtual Floppy Drive.
4. Change the Virtual Floppy Settings as needed.
5. Reboot the server or continue the current Virtual Floppy session.

Note: Detailed help and the HP Diskette Image Utility can be found at www.compaq.com/lights-out.

Virtual Floppy Image File: **Browse...**

InsertFloppyImage

Important Information about the Virtual Floppy Drive

The Virtual Floppy Drive enables important remote operations on HP ProLiant servers such as:

- OS install from a network drive
- RomPac firmware updates
- User Diagnostics (HP recommends that you first delete the SYSMON2.TM file before using User Diagnostics with the Virtual Floppy Drive)

The Virtual Floppy Drive has been designed and tested with bootable Microsoft DOS, Windows 95, and Windows 98 diskettes. The technology is built upon standard Interrupt 13 BIOS calls and requires an operating system that accesses the floppy drive via Interrupt 13. Please note that the Virtual Floppy Drive is not compatible with protected-paging mode applications such as EMM386. When creating bootable diskettes for the Virtual Floppy Drive, please ensure that protected-paging mode applications are not used.

To upload a diskette image to the RILOE II on the host server:

1. Click **Virtual Floppy** in the **Virtual Devices** tab.
2. Type the location and name of the diskette image file, or click **Browse** and select the diskette image file you want to transfer to the RILOE II.
3. When the full path and diskette image file name are in the text entry field, click **Insert Floppy Image** to upload the image file to the RILOE II in the host server.

If needed, modify options for the Virtual Floppy Drive.

The Virtual Floppy Drive can hold only one diskette image file at a time. The uploaded diskette image file remains in the Virtual Floppy Drive until it is either replaced with another diskette image file or erased from the Virtual Floppy Drive by clicking **Eject Virtual Floppy** on the **Virtual Floppy Status** screen. The diskette image file will also be erased if power to the RILOE II is lost. Logging out of the RILOE II does not erase the diskette image file from the Virtual Floppy Drive.

Changing Virtual Floppy Drive Settings

The **Virtual Floppy** screen allows you to view and change current settings for the Virtual Floppy Drive. Changes you make to the virtual diskette drive boot and write-protect options take effect when you click **Submit Changes**.

A host server can use files uploaded to a Virtual Floppy Drive only if the Virtual Floppy Drive is active. The Virtual Floppy Drive becomes active when the RILOE II restarts the host server using a diskette image file uploaded to the Virtual Floppy Drive. The Virtual Floppy Drive remains active until the remote host server is restarted with its own operating system.

NOTE: Although the Virtual Floppy Drive is active, the physical diskette drive of the host server is temporarily disabled. The diskette drive of the host server becomes re-enabled when the host server is restarted with its own operating system and the Virtual Floppy Drive is not active.

The Virtual Floppy Boot option has three settings:

- **Boot Always**—This setting instructs the RILOE II to always boot the host server from the diskette image file in the Virtual Floppy Drive. If this setting is checked, the **Virtual Floppy Status** screen shows the virtual drive as active after the server has restarted.
- **Boot Once**—This setting instructs the RILOE II to boot the host server one time from the diskette image file in the Virtual Floppy Drive. If this setting is checked, the **Virtual Floppy Status** screen shows the virtual drive as active after the server has restarted.
- **No Boot**—This is the default setting for the Virtual Floppy Drive. It instructs the RILOE II not to boot the host server from the diskette image file in the Virtual Floppy Drive. This setting has no effect on the Virtual Floppy Drive status.

Copying Files on the Host Server to the Virtual Floppy Drive

The **Write Protect Virtual Floppy** option on the **Virtual Floppy** screen specifies whether data on the host server can be copied to the Virtual Floppy Drive. If this option is selected, the Virtual Floppy Drive is write protected and no data from the host server can be copied to it.

To copy remote files to the Virtual Floppy Drive using standard operating system commands typed at the Remote Console, be sure that the **Write Protect Virtual Floppy** option is deselected. The **Virtual Floppy** option cannot be used to upgrade the RILOE II firmware.

Diskette Image Utility

The Diskette Image Utility has three functions:

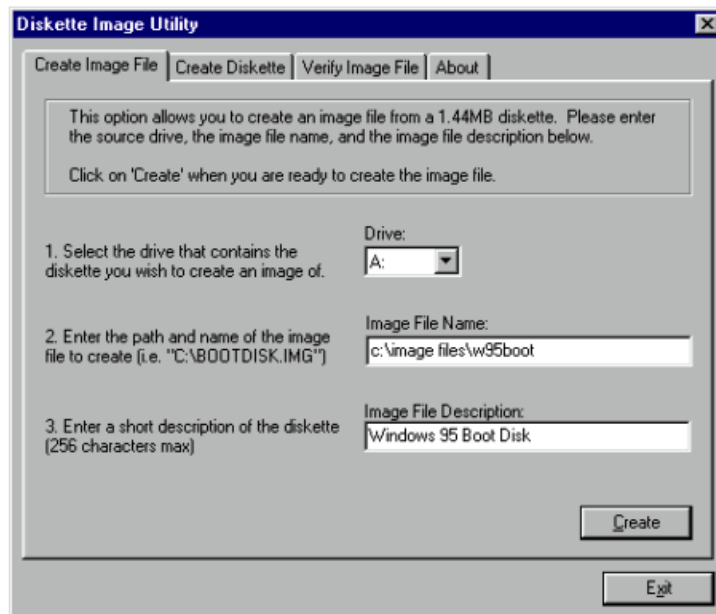
- Creating an image file from a standard 1.44-MB diskette suitable for use with the Virtual Floppy Drive
- Creating a standard 1.44-MB diskette from an image file copied from the Virtual Floppy Drive
- Comparing a diskette image file with a standard 1.44-MB diskette

Creating an Image File from a Diskette

To create an image file from a standard 1.44-MB diskette:

1. Launch the Diskette Image Utility and click the **Create Image File** tab.
2. Insert the diskette you want to make an image of into the diskette drive.
3. Provide the path, the file name of the image, and an image file description. A screen similar to the following is displayed.

NOTE: The path can be a local or a network path. If you do not provide a path, the image file is saved on the Desktop.



4. Click **Create** to generate the image file in the location you specified.

Creating a Diskette from an Image File

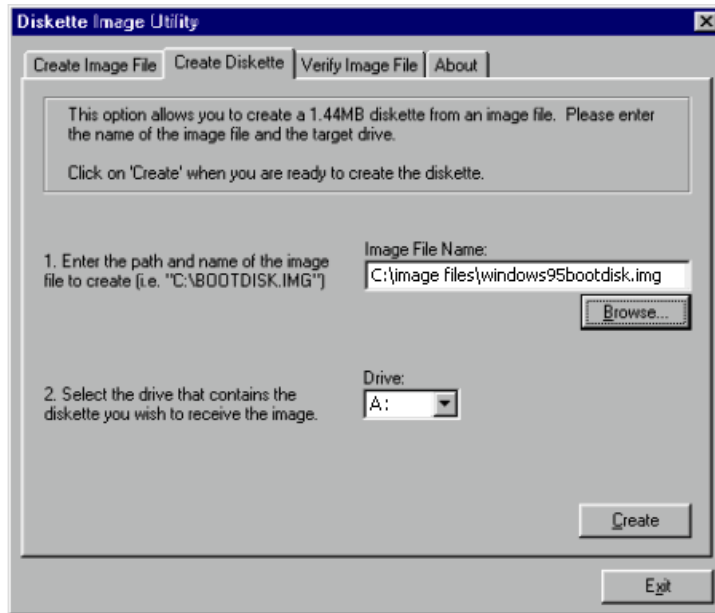
To create a standard 1.44-MB diskette from an image file:

1. Launch the Diskette Image Utility and click the **Create Diskette** tab.
2. Insert a blank diskette into the diskette drive.



CAUTION: If the diskette is not blank, all data on the diskette will be erased.

3. Provide the path and name of the image file and the target diskette drive.
4. To navigate to the location of the image file, click **Browse**. A screen similar to the following is displayed.
5. Click **Create** to generate the diskette from the image file.

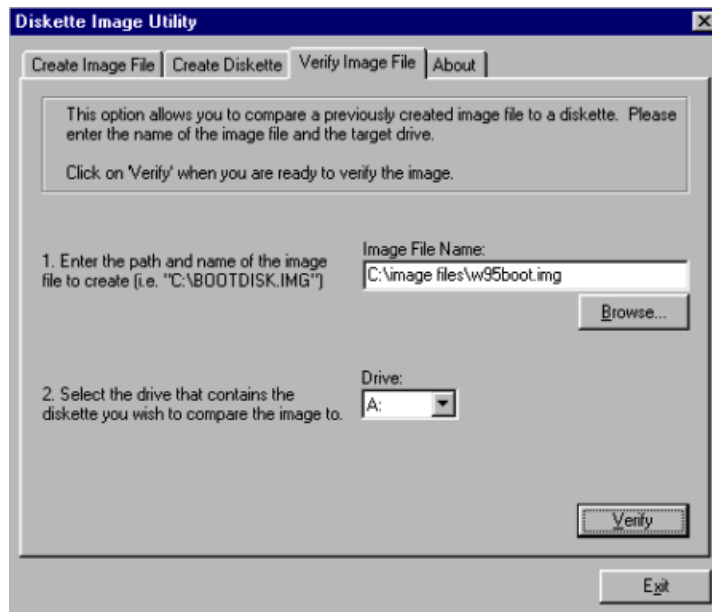


Comparing an Image File with a Diskette

To compare an existing image file with a diskette:

1. Launch the Diskette Image Utility and click the **Verify Image File** tab.
2. Insert the diskette that needs to be compared with an image file into the diskette drive.
3. Provide the path and name of the image file and the target diskette drive.
4. To navigate to the location of the image file, click **Browse**. A screen similar to the following is displayed.

5. Click **Verify** to start comparing the image file with the diskette. When the verification is complete, a popup window displays the results.



Virtual Media

Virtual Media devices connect to the host server using USB technology. Using USB enables new capabilities for the RILOE II Virtual Media devices when connected to USB-supported operating systems. The RILOE II Virtual Media devices are available to the host operating system on USB-supported operating systems. With Virtual Media, an administrator can direct a host server to boot and use a CD, a standard 1.44-MB diskette, or an image file from anywhere on the network. Virtual Media devices eliminate the need to visit a host server to insert and use a diskette or CD, enabling remote operating system installation and host server ROM updates from a client machine.

Virtual Media options allow you to carry out any of the following functions:

- Running User Diagnostics by booting the host server from a diagnostic diskette

NOTE: HP recommends that you first delete the SYSMON2.TM file before using User Diagnostics with the Virtual Floppy Drive.

- Applying ROM updates to remote host servers
- Deploying an operating system or other software from a CD in a client machine to a host server
- Performing disaster recovery of failed operating systems

Virtual Media USB Support

Virtual Media devices are supported on servers that use the 30-pin Remote Insight cable. Future servers and server ROMs that support bootable USB devices can use the RILOE II Virtual Media USB diskette and CD-ROM as bootable devices.

After the operating system is booted, the RILOE II Virtual Media USB diskette and CD-ROM are available for those operating systems that support USB devices (beyond USB mouse and USB keyboard). Operating systems that have been tested with the USB diskette and USB CD are:

- Microsoft®
 - Windows® 2000 Server
 - Windows® 2000 Advanced Server
 - Windows® 2000 Datacenter (HP certified versions only)
 - Windows® Server 2003
- Red Hat Linux 7.2, 7.3, 8.0 and Advanced Server 2.1
- SuSE 7.0 and 8.0

Using the Local CD Drive

To use the local CD drive:

1. Select **Virtual Media** on the **Virtual Devices** tab or the left menu. The Virtual Media applet loads.
2. Select **Local CD Drive** (client).

3. In the **Local CD Drive** field, select the local drive letter of the desired physical CD drive.
4. Click **Connect**. When connected, the **Local CD Drive** is available to the host server until **Disconnect** is clicked or the **Virtual Media** applet is closed.

When you are finished using the **Local CD Drive**, you may select either to disconnect the device from the host server or close the applet.

NOTE: The Virtual Media applet must remain open in your browser as long as you continue to use this feature from the host server.

The local CD drive is available to the host server at runtime if the operating system on the host server supports USB devices.

The operating system displays the local CD drive just like a physical CD drive.

NOTE: The host operating system may prompt you to complete a new hardware found wizard the first time you use this feature.

NOTE: You may receive a warning message from the host operating system regarding unsafe removal of a device when you disconnect from the RILOE II Virtual Media feature. This warning may be avoided by using the operating system-provided feature to stop the device before disconnecting from the Virtual Media.

Using the Local Floppy Drive

To use the local floppy drive:

1. Select **Virtual Media** on the **Virtual Devices** tab or the left menu. The Virtual Media applet loads.
2. Select **Local Floppy Drive**.
3. In the **Local Floppy Drive** field, select the local drive letter of the desired physical diskette drive.
4. Click **Connect**. When connected, the local floppy drive will be available to the host server until **Disconnect** is clicked or the **Virtual Media** applet is closed.

When you are finished using the local diskette drive, you may select either to disconnect the device from the host server or close the applet.

NOTE: The Virtual Media applet must remain open in your browser as long as you continue to use this feature from the host server.

The local diskette drive is available to the host server at runtime if the operating system on the host server supports USB devices.

The operating system displays the local diskette drive just like a physical diskette drive.

NOTE: The host operating system may prompt you to complete a new hardware found wizard the first time you use this feature.

NOTE: You may receive a warning message from the host operating system regarding unsafe removal of a device when you disconnect from the RILOE II Virtual Media feature. This warning may be avoided by using the operating system-provided feature to stop the device before disconnecting from the Virtual Media.

Mounting the USB Virtual Media Floppy in Linux

The following is an example of mounting the USB Virtual Media Floppy in Linux:

1. Access RILOE II using a browser.
2. Select **Virtual Media** on the **Virtual Devices** tab or the left menu. The Virtual Media applet loads.
3. Select the diskette image to be used and click **Connect**.
4. Load the USB drivers using the following commands:

```
insmod usbcore
insmod usb-storage
insmod usb-ohci
```
5. Mount the floppy drive using the following command:

```
mount /dev/sda /mnt -t vfat
```

NOTE: Your commands may be different. Use the `man mount` command for additional file system types.

Using the Local Image File

To use the local image file:

1. Select **Virtual Media** on the **Virtual Devices** tab or the left menu. The Virtual Media applet loads.

2. Select **Local Image File**.
3. Enter the name of the diskette image in the text box or use **Browse** to locate the image file. Then click **Connect**.
4. When connected, the local image file will be available to the host server until **Disconnect** is clicked or the Virtual Media applet is closed. When you are finished using the local image file, you may select either to disconnect the device from the host server or close the applet.

NOTE: The Virtual Media applet must remain open in your browser as long as you continue to use this feature from the host server.

The local image file is available to the host server at runtime if the operating system on the host server supports USB devices. Windows® 2000, Windows® Server 2003, and Linux operating systems support USB devices at the time of publication of this user guide.

Disabling Virtual Media Error Message

You may receive a warning message from the host operating system regarding unsafe removal of a device when you disconnect from the RILOE II Virtual Media feature. In Windows® operating systems, this warning may be avoided by using the operating system-provided feature to stop the device before disconnecting from the Virtual Media.

To disable the error message:

1. Click the USB icon in the system tray.
2. Click **Stop/safely remove USB Mass Storage Device - Drive (E:)**. (There may be a different message for the virtual floppy drive.)
3. When USB Mass Storage Device can now be safely removed from the system is displayed, click **OK**.
4. Click **Disconnect** in the **Virtual Devices** applet.

Virtual Media Applet Timeout

The Virtual Media applet does not have a timeout when Virtual Media is connected to the host server. Even if the user logs out, the Virtual Media applet will maintain the connection to allow the host server access to the Virtual Media.

Managing the User and Configuration Settings of the RILOE II

The options available in the **Administration** section allow you to manage user settings, SNMP alerting through integration with Insight Manager, security settings, and network environment settings. This section also provides a firmware upgrade option that allows you to keep the RILOE II current.

User Configurations and Settings

In the **Administration** section, you can add new users or modify a user's profile.

Adding Authorized Users

You can assign a different access level to each user. A user can have the administer access privilege, which grants the ability to create, modify, or delete other users. Conversely, a user can be denied the administer access privilege, as well as access to other features of the RILOE II.

The RILOE II supports up to 25 users. Login attempts are tracked and login failures are logged. You have the option of generating alerts on a remote management system running Insight Manager 7 when login attempts fail. The RILOE II supports all LAN-oriented security features and dynamic password encryption.

To add a new user to the RILOE II:

1. Log in to the Remote Insight Lights-Out Edition II using an account with administrator privileges.
2. Click **User Settings** on the **Administration** tab.
3. Click **Add** and complete the fields with the necessary information for the user being added.
4. When the user profile is complete, click **Save User Information** to return to the **User Settings** screen.

NOTE: To clear the user profile form while entering a new user or to recover the user's original information, click **Restore User Information**.

Modifying an Existing User's Profile

To modify an existing user's information:

1. Log in to the Remote Insight Lights-Out Edition II using an account with administrator privileges.
2. Click **User Settings** on the **Administration** tab.
3. Select the user that you want to modify and click **Modify**.
4. Change the user information in the fields that require modification. Click **Save User Information** to return to the **User Settings** screen.

NOTE: To clear the user profile form while entering a new user or to recover the user's original information, click **Restore User Information**.

Modifying Network Settings for the RILOE II

The **Network Settings** option in the **Administration** section allows you to view and modify the NIC IP address, subnet mask, and other TCP/IP-related settings. From this screen, you can enable or disable DHCP and, for servers not using DHCP, you can configure a static IP address. The **Network Settings** option is also the location where you specify the IP address or DNS name for Web-based Management agents.

hp Remote Insight LIGHTS-OUT EDITION II

Server Name: Administration
Remote Insight Name: RILOEIIAdmin02
Current User: Administrator

System Status | Remote Console | Virtual Devices | **Administration** | Insight Agent | Log out

User Settings
Global Settings
Network Settings
SNMP Settings
Certificate Administration
Upgrade Firmware
Directory Settings

Network Settings

Standard Configuration Parameters

Transceiver Speed Autoselect: ☒ Yes ☐ No

Speed: ☐ 10 MBits/s ☒ 100 MBits/s

Duplex: ☐ Half ☒ Full

Enable DHCP: ☒ Yes ☐ No

Use DHCP Supplied Gateway: ☒ Yes ☐ No

Use DHCP Supplied DNS Servers: ☒ Yes ☐ No

Use DHCP Supplied WINS Servers: ☒ Yes ☐ No

Use DHCP Supplied Static Routes: ☒ Yes ☐ No

Register With WINS Server: ☒ Yes ☐ No

IP Address:

Gateway IP Address:

Subnet Mask:

Advanced Configuration Parameters

Remote Insight Lights-Out Edition II Board Name:

Domain Name:

DHCP Server:

Primary DNS Server IP Address:

Secondary DNS Server IP Address:

To change network settings for the RILOE II:

1. Log in to the Remote Insight Lights-Out Edition II using an account with administrator privileges.
2. Click **Network Settings** in the **Administration** tab.
3. Change the network settings as needed by typing in the fields. After the parameter changes have been made, click **Apply** to complete the changes.

When you click **Apply**, the RILOE II will restart. When this happens, the connection from the browser to the board will be terminated. To reestablish a connection, wait 60 seconds before launching another Web browser session and logging in to the RILOE II.

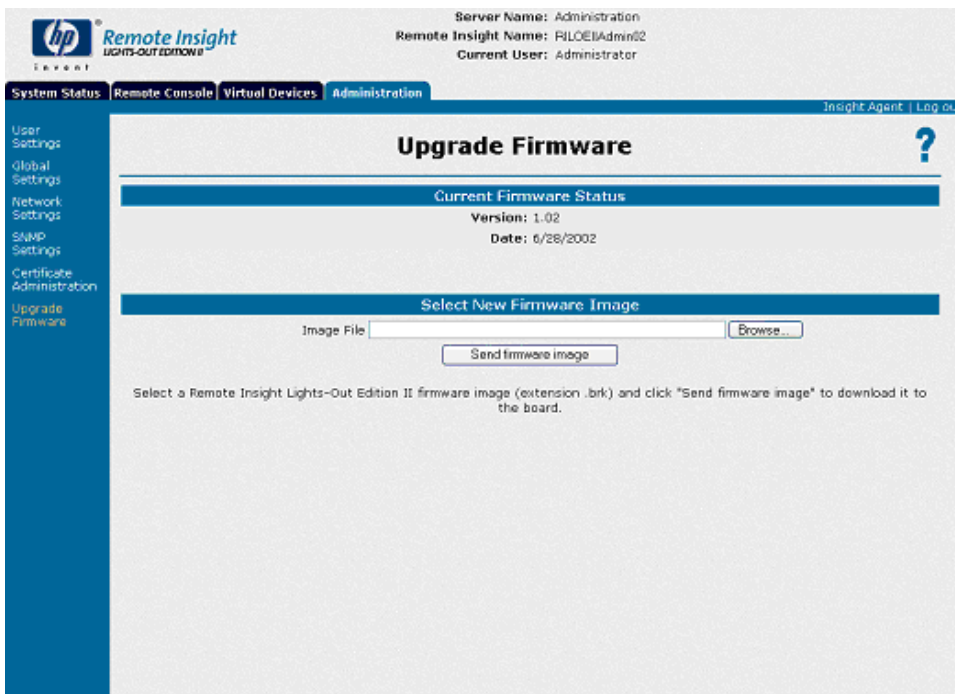
Keeping the RILOE II Firmware Current

Firmware upgrades enhance the functionality of the RILOE II. The firmware upgrade can be done from any network client using a standard Web browser. However, only users with the configure RILOE settings rights can upgrade the firmware on the RILOE II.

The most recent firmware for the RILOE II is available on the HP website (<http://www.hp.com/servers/lights-out>) as a Smart Component.

To upgrade the RILOE II firmware:

1. Log on to the RILOE II using an account with configure RILOE settings privileges.
2. Click **Upgrade Firmware** on the **Administration** tab.



3. Follow the instructions on the firmware upgrade screen. If you need additional assistance, click **Help**.

SNMP Alerts

In the **Administration** section, you can enable, disable, and test SNMP alerts.

Enabling SNMP Alerts

The **Configure and Test SNMP Alerts** section in the **Administration** section can be forwarded from the host server and RILOE II to an Insight Manager console. The two types of alerts that you can receive are:

- **Host OS Generated SNMP Traps**—The Insight Management agents provided for each supported network operating system generate these alerts. These agents must be installed on the host server to receive these alerts. Alerts are sent to Insight Manager clients on the network and forwarded asynchronously by the RILOE II to users that have been configured to receive them.
- **Remote Insight Board Alerts**—These alerts are generated when the RILOE II detects conditions that are independent of the host server operating system. These alerts can be Insight Manager SNMP traps or pager alerts. Alerts include major events such as a host server power outage or host server reset and RILOE II events such as a disconnected keyboard cable or an unauthorized login attempt.

To enable alerts:

1. Log in to the Remote Insight Lights-Out Edition II using an account with administrator privileges.
2. Click **SNMP Settings** on the **Administration** tab.
3. Click **Yes** for the alert types that you want to receive.
4. Enter the IP addresses to send the alerts to in the **SNMP Trap Destinations** field.
5. Click **Apply Settings**.

Generating Test Alerts

Test alerts are generated through the **Manage Alerts** option in the **Administration** section. These alerts include Insight Manager 7 SNMP traps and are used to verify the network connectivity of the RILOE II in Insight Manager 7.

To send out a test alert:

1. Click **Global Settings** on the **Administration** tab.
2. Click **Send Test Trap** in the **Configure and Test SNMP Alerts** section.
3. After generating the alert, a confirmation screen is displayed.
4. If the alert system is working correctly, an alarm screen will display advising you that an alert has been received.

Disabling Alerts

To disable alerts:

1. Log in to the Remote Insight Lights-Out Edition II using an account with administrator privileges.
2. Click **Global Settings** on the **Administration** tab.
3. Click **No** for the alert types that you want to disable.
4. Click **Apply Settings**.

Global Settings Screen

hp Remote Insight LIGHTS-OUT EDITION II

Server Name: Administration
Remote Insight Name: RILOEIIAdmin02
Current User: Administrator

System Status Remote Console Virtual Devices Administration

Insight Agent | Log out

Global Settings

Security Settings

Session Timeout (minutes): 120

ROM Configuration Utility (F8): ☒ Enabled ☐ Disabled

Emergency Management Services: ☒ Enabled ☐ Disabled

Bypass reporting of external power cable: ☐ Enabled ☒ Disabled

Remote Console Port Configuration: ☒ Enabled ☐ Disabled ☐ Automatic

Remote Access with Pocket PC: ☐ Enabled ☒ Disabled

Remote Console Data Encryption: ☒ Enabled ☐ Disabled

SSL Encryption Strength: ☐ 128-bit (High) ☒ 40-bit (Low)

Current Cipher: RC4-MD5 with 128 bit encryption

Remote Insight HTTP Port: 80

Remote Insight HTTPS Port: 443

Remote Insight Remote Console Port: 23

Keyboard Settings

Host Keyboard: ☒ Enabled ☐ Disabled

Configure Insight Manager 7 Integration

Level of Data Returned: None (No Response to Request)

[View XML Reply](#)

Security Settings

The **Security Settings** provided for the RILOE II include:

- **Session Timeout**—This option allows the Remote Console session on the network client to end automatically after the set amount of time selected.
- **ROM-Based Configuration Utility (F8)**—This option allows you to enable or disable the RBSU F8 setup.
- **Remote Access with Pocket PC**—This option allows you to enable or disable the remote access for pocket PCs.

To change the security settings:

1. Log in to the Remote Insight Lights-Out Edition II using an account with administrator privileges.

2. Click **Global Settings** on the **Administration** tab.
3. Change the settings in the **Security Settings** section.
4. Click **Apply Settings**.

Another security feature is the progressive delays for failed browser login attempts. After a series of five failed login attempts by a user, the RILOE II imposes delays to subsequent logins. This scenario continues until a valid login is completed. This feature assists in defending against possible dictionary attacks against the browser login port.

Resetting the RILOE II to the Factory Default Settings

The RILOE II can be reset to the factory default settings by using the RBSU F8. To reset the board to the factory settings:

1. Restart or power up the server.
2. Press the **F8** key to enter RBSU F8 when the cursor flashes and the RILOE II prompt displays on the screen.
3. Select **File**, then select **Set Defaults**.
4. Select **Enter** when the screen displays **Set to Factory Defaults**.
5. Select **File**, then select **Exit**.

Getting Help

Assistance for all RILOE II options is available by means of the Remote Insight Help hyperlink. This link provides summary information about the features of the board and helpful information for optimizing the operation of the RILOE II.

Integrating the RILOE II with Insight Manager 7

The RILOE II fully integrates with Insight Manager 7 in key operating system environments, providing access to Insight Management agents and support for full in-band SNMP management. The RILOE II supports SNMP trap delivery to an Insight Manager Console, which can be configured to forward SNMP traps to a pager or email.

Full integration with Insight Manager 7 also provides a single management console for launching a standard Web browser to access the RILOE II and for providing diagnostic information about the operation of the board. While the operating system is running, you can establish a connection to the RILOE II using Insight Manager 7.

Receiving SNMP Alerts in Insight Manager 7

Insight Manager 7 provides support for full in-band SNMP management, and the RILOE II supports SNMP trap delivery to an Insight Manager 7 console. Configuring receipt of SNMP alerts in Insight Manager 7 is a two-step process. The process requires configuring the RILOE II to enable SNMP alerts and configuring Insight Manager 7 to receive SNMP alerts from a managed RILOE II.

1. To configure receipt of SNMP alerts in Insight Manager 7:

In the **Configure and Test SNMP Alerts** section of the **Global Settings** screen of the RILOE II Web interface, you can enable SNMP alerting ("Enabling SNMP Alerts" on page 72) and provide an SNMP trap destination IP address.

2. To configure the RILOE II in Insight Manager 7:
 - a. Click the RILOE II you want to configure from the **Management Processors** screen.
 - b. Click **SNMP Communications Settings**.
 - c. Enter your values and click **Submit**.

Launching a Web Browser

Insight Manager 7 provides a single management console platform for launching a Web browser to access the RILOE II.

To launch a Web browser from the Insight Manager 7 device management screen:

1. Click the Remote Insight Lights-Out Edition II from the **Management Processors** screen.

2. Click **Remote Insight** in the **Device Links** section.

RILOE II Diagnostics

Insight Manager 7 provides options to manage the recovery of remote servers. The recovery options of Insight Manager 7 also provide you with a status of the RILOE II and access to diagnostics. The **Remote Insight Board** status screen provides useful information regarding the operation of the RILOE II. It shows network information and external power cable status, thus allowing you perform any of the functions in the following procedures.

To access the RILOE II server recovery options of Insight Manager 7:

1. Click the Remote Insight Lights-Out Edition II from the **Management Processors** screen.
2. Click **Subsystem Status Information** in the **Host Server Information** section.
3. Click **Remote Insight** in the **Recovery** section on the left side of the screen.

RILOE II Event Log

A summary of the RILOE II events can be displayed. The summary lists the date, time, and a short description of each event. The most recent event is displayed first. Events that are recorded include system resets, ASR, system power loss, user logins to the RILOE II, and unsuccessful login attempts.

To view the event log from Insight Manager 7:

1. Click the Remote Insight Lights-Out Edition II from the **Management Processors** screen.
2. Click **Subsystem Status Information** in the **Host Server Information** section.
3. Click **Remote Insight** in the **Recovery** section on the left side of the screen.
4. Click **Event Log** in the **Remote Insight Board** section of the screen.

Network Interface Statistics

Statistics for the embedded network interface on the RILOE II can be displayed. The statistics can be shown in several ways to assist in management of the host server.

To view the network statistics:

1. Click the Remote Insight Lights-Out Edition II from the **Management Processors** screen.
2. Click **Remote Insight** in the **Recovery** section on the left side of the screen.
3. Click **Subsystem Status Information** in the **Host Server Information** section.
4. Click **Embedded Intel (Model)** in the **Remote Insight Board** section.

Additional Help for Insight Manager 7

For detailed instructions about using Insight Manager 7 with the RILOE II, refer to the documentation provided with Insight Manager 7.

Pocket PC Access with the RILOE II

The RILOE II provides support for network access from HP handheld device supporting Pocket IE. The RILOE II provides a special user interface when connecting from the HP iPAQ Pocket PC.

Features on the handheld interface include:

- Remote Insight Summary
- Status
- Virtual Power Button
- Reboot Server
- Virtual Floppy Status
- Integrated Management Log

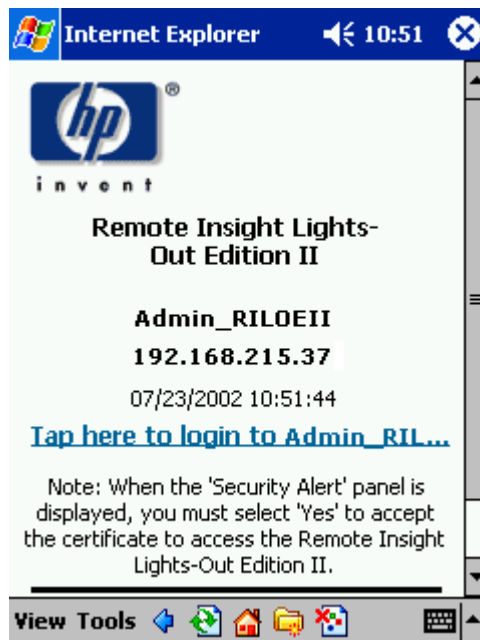
- Remote Insight Event Log
- SSL Encryption—40-bit and 128-bit options

To enable the Pocket PC access feature:

1. Log in to the Remote Insight Lights-Out Edition II using an account with administrator privileges.
2. Click **Global Settings** on the **Administration** tab.
3. Click **Enabled for the Remote Access with Pocket PC**.
4. Click **Apply Settings** to save the changes.

The following is an example of accessing the RILOE II built-in website with the HP iPAQ H3600 Pocket PC:

1. When the RILOE II built-in website is accessed, the client browser is detected. If the client is an iPAQ running Pocket Internet Explorer, specific content is provided that has been optimized for display on the small form factor screen. The initial Web page is not encrypted. You must tap **Tap here to login to RILOE name**.



2. An SSL session is negotiated and a certificate warning is displayed. Tap **Yes** to proceed to the login screen.

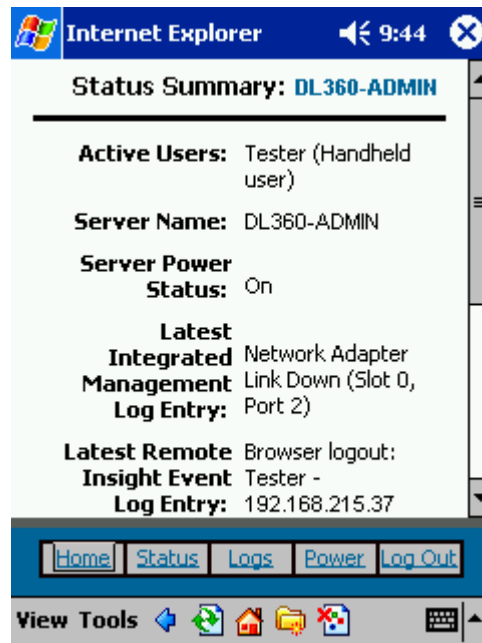


3. Enter a valid user ID and password in the login window and tap **Go**. Do **not** enable the **Save Password** option.

NOTE: The user ID and password are case sensitive. The password must be at least eight characters in length.



4. If the user ID and password are valid, you are logged in to the RILOE II and a Web page similar to the following is displayed.



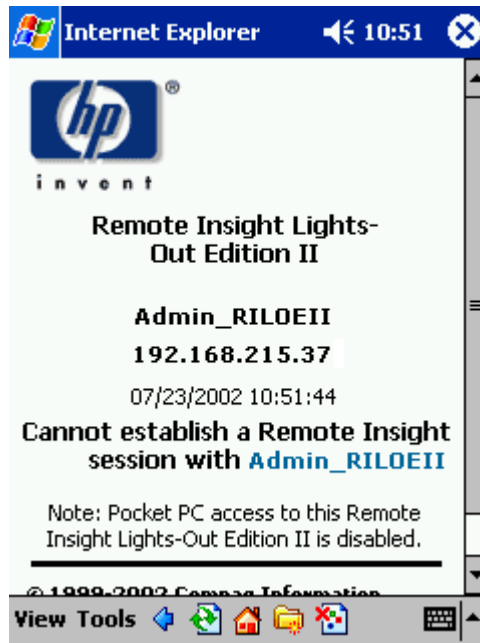
At a minimum, the iPAQ browser interface supports the Virtual Power Button, rebooting of the server, changing of the Virtual Floppy status, viewing of the logs, and display of status information.

NOTE: If you attempt to browse to any unsupported Web page, you are redirected to the initial iPAQ Web page.

Browsing to an unsupported Web page is considered an attempt to use the iPAQ browser interface for functions beyond the scope of the ones listed. For example, attempting to access **Global Settings** from the iPAQ will result in you being redirected to the initial display window.

In this case, because you are already logged in, tapping the **Tap here to login to RILOE name** at the initial display window bypasses the login screen and takes you to the home page.

You can enable or disable the iPAQ browser interface in **Global Settings** only from a desktop browser. If access has been disabled, the iPAQ user will be notified by the Web page shown. Handheld access is disabled by default.



User authentication is required for access to the RILOE II. After authentication, the Pocket PC user remains logged in until the session is ended by closing the Pocket PC browser. To close the browser, tap the **Q** key, tap **Close active task**, and stop the browser.

Group Administration

In This Section

Features.....	85
Group Administration Using Insight Manager 7	86
Group Administration Using Batch Processing.....	90

This section discusses administration for a group of RILOE II boards by using the Lights-Out Configuration Utility executable file, CPQLOCFG.EXE. This executable can be used through either Insight Manager 7 or batch processing.

Features

The Lights-Out Configuration Utility allows you to perform the following functions:

- Add, modify, or delete a user
- Obtain individual or all users' configuration information
- Modify network settings
- Modify global settings
- Modify directory services settings
- Clear the RILOE II Event Log
- Obtain the firmware version of the RILOE II board
- Update the RILOE II board firmware
- Obtain and set the Virtual Floppy status
- Insert, copy, and eject a Virtual Floppy image

- Configure Remote Console hot key settings
- Obtain and set the Virtual Power Button status
- Obtain the server power status
- Reset the server

Group Administration Using Insight Manager 7

After the firmware has been updated ("Keeping the RILOE II Firmware Current" on page 71), the IT administrator can manage multiple Remote Insight boards through Insight Manager 7. The four components of group administration are:

- RIBCL
- Lights-Out Configuration Utility
- Query Definition
- Application Launch in Insight Manager 7

Insight Manager 7 discovers the RILOE II boards as management processors. During this process, it also discovers all Remote Insight board/PCI boards as management processors. When you perform Group Administration, the Remote Insight boards/PCI boards generate an error. Exclude these boards during the query definition process.

Insight Manager 7 uses the Lights-Out Configuration Utility to send a RIBCL file to a group of RILOE II boards to manage the user accounts for those boards. The boards then perform the action designated by the RIBCL file and send a response to the log file.

RIBCL is a dialect of XML. The information presented in the XML file is not designed to display information in a Web browser but is designed to enable secure communication between the RILOE II and the host application.

Refer to the RIBCL section ("Remote Insight Command Language" on page 151) for a complete listing of RIBCL tags and error messages, and for sample scripts used for adding, modifying, or deleting a user on a RILOE II.

Lights-Out Configuration Utility

The Lights-Out Configuration Utility is used to execute RIBCL scripts on the RILOE II boards. The executable file for the utility is CPQLOCFG.EXE. You can download this utility from the HP website (<http://www.hp.com/servers/lights-out>).

The Lights-Out Configuration Utility must reside on the same server as Insight Manager 7. The Lights-Out Configuration Utility generates two types of error messages: runtime and syntax. A runtime error occurs when an invalid action is requested.

NOTE: Runtime errors are logged to the following directory:
C:\PROGRAM FILES\INSIGHT MANAGER 7

A syntax error occurs when an invalid XML tag is encountered. When a syntax error occurs, the Lights-Out Configuration Utility stops running and logs the error in the runtime script and output log file.

NOTE: Syntax errors take the format of "Syntax error: expected 'x' but found 'y' " as shown in the following example: Syntax error:
expected USER_LOGIN=userlogin but found
USER_NAME=username

Refer to the RIBCL section ("Remote Insight Command Language" on page 151) for a complete listing of errors.

Query Definition in Insight Manager 7

To group all of the RILOE II boards, log in to Insight Manager 7 and create a query.

To create the query:

1. Log in to Insight Manager 7.
2. Click **Device** in the navigation bar on the top left side of the screen.
3. Click **Queries**, then click **Device**.
4. Locate the **Personal Queries** section in the main window. If a query category exists, proceed to step 7; otherwise proceed to step 5.

5. Click **New** to create a new category. For this example, the name of the new category is RIB Cards. Click **Create Category**.
6. Click **Queries** to return to the **Device Queries** screen.
7. Click **New**, within the appropriate query category, to open the **Create/Edit Query** screen where the query definition is created.
8. Define the query name, for example "Mgmt Processors."
9. Select **Device(s) of type** and then select **Devices by product name**. In the criteria windows, set the product name to **Remote Insight Lights-Out Edition II**.
10. Click **type** in the **Query Description** field. A popup window opens where you define the device type.
11. Select **Management Processor** and click **OK**.
12. Click **Save** to return to the **Device Query** screen.
13. Find the newly created query in the appropriate query category and click the query name to run it for verification.
14. Click **Overview** on the left side of the screen after the verification has taken place. The initial page for devices opens.

Application Launch Using Insight Manager 7

The application launch combines the RIBCL, the Lights-Out Configuration Utility, and the query definition to manage the group administration for the RILOE II boards.

To create an Application Launch task:

1. Click **Device** in the navigation bar on the top left side of the screen.
2. Click **Tasks** to open the **Tasks** screen.
3. Click **New Control Task**. A drop-down menu is displayed.
4. Click **Application Launch** from the drop-down menu to open the **Create/Edit Task** screen.

5. Type the full path and name for the Lights-Out Configuration Utility in the area provided. If the CPQLOCFG.EXE file is in the root directory of the C:\ drive, then the path is: C:\cpqlocfg.exe
6. Type the parameters in the area provided. Insight Manager 7 requires the following parameters for the Lights-Out Configuration Utility:

-F is the full path of the RIBCL file name.

-V is the verbose message (optional).

If the RIBCL file is in the root directory of on the C:\ drive, then the parameters are:

-F C:\MANAGEUSERS.xml -V

NOTE: Insight Manager 7 does not allow the -L parameter to designate an output log file. A default log file named with the DNS name or the IP address is created in the same directory where CPQLOCFG is launched.

7. Click **Next**. A screen is displayed with options for naming the task, defining the query association, and setting a schedule for the task.
8. Enter a task name in the **Enter a name for this task** field.
9. Select the query that had been created earlier, for example "Mgmt Processors."
10. Click **Schedule** to define when the Application Launch task will run. A schedule configuration window is displayed.
11. Click **OK** to set the schedule.

NOTE: The default schedule for a control task is **Now**.

12. Click **Finish** to save the Application Launch task.
13. Click the **Execute a Task** icon (the green triangle) to execute the Group Administration.

NOTE: Insight Manager 7 does not allow the -L parameter to designate an output log file. A default log file named with the DNS name or the IP address is created in the same directory where CPQLOCFG is launched.

NOTE: Syntax errors take the format of "Syntax error: expected 'x' but found 'y' " as shown in the following example: Syntax error: expected USER_LOGIN=userlogin but found USER_NAME=username

Group Administration Using Batch Processing

Group administration can be delivered to the RILOE II through batch processing.

The Lights-Out Configuration Utility is used to execute the RIBCL ("Remote Insight Command Language" on page 151) on the Remote Insight Lights-Out Edition II. The executable for the Lights-Out Configuration Utility is CPQLOCFG.EXE. This utility can be downloaded from the HP website (<http://www.hp.com/servers/lights-out>).

The following example shows a sample batch file that can be used to perform the Group Administration for the Remote Insight Lights-Out Edition II:

```
REM Updating the Remote Insight Lights-Out Edition II
board
REM Repeat line for each board to be updated
REM
CPQLOCFG -S RIB1 -F C:\...SCRIPT.XML -L RIB1LOG.TXT -V
CPQLOCFG -S RIB2 -F C:\...SCRIPT.XML -L RIB2LOG.TXT -V
CPQLOCFG -S RIB3 -F C:\...SCRIPT.XML -L RIB3LOG.TXT -V
.
.
.
CPQLOCFG -S RIBN -F C:\...SCRIPT.XML -L LOGFILE.TXT -V
```

- -S is the switch that determines the Remote Insight Lights-Out Edition II that is to be updated. This switch is either the DNS name or IP address of the target server.

Do **not** use this switch if you are launching from RILOE II. Insight Manager 7 will provide the address of the Remote Insight Lights-Out Edition II when CPQLOCFG.EXE is launched.

- -F is the switch that gives the full path location and name of the RIBCL file that contains the actions to be performed on the board.
- -L is the switch that defines where the log file will be generated and what the file name will be. If this switch is omitted, a default log file with the DNS name or the IP address is created in the same directory used to launch CPQLOCFG.

Do **not** use this switch if launching from RILOE II.

- -V is the optional switch that turns on the verbose message return. The resulting log file contains all commands sent to the Remote Insight board, all responses from the Remote Insight board, and any errors. By default, only errors and responses from GET commands are logged without this switch.
- -C causes CPQLOCFG to check the syntax of the XML, but not open a connection to the Remote Insight board.

The switches -L and -V may or may not be set depending on the IT administrator's preferences.

If it is not in the same directory, be sure that the Lights-Out Configuration Utility is in a directory referenced by the PATH environment variable. Any log files generated are placed in the same directory as the Lights-Out Configuration Utility executable.

NOTE: The Lights-Out Configuration Utility overwrites any existing log files.

Directory Services

In This Section

Introduction to Directory Services	93
Directory Services Support.....	93
Required Software	95
Schema Installer	95
Management Snap-In Installer.....	98
Directory Services for Active Directory.....	99
Directory Services for eDirectory.....	116
Configuring Directory Settings	129
User Login to RILOE II.....	130

Introduction to Directory Services

The RILOE II directory services functionality, available with firmware version 1.10 or later, allows you to:

- Authenticate users from a shared consolidated, scalable user database including HP products.
- Control user privileges (authorization) within the directory service.
- Use Roles in the directory service for group level administration of RILOE II boards and RILOE II users.

IMPORTANT: Installing Directory Services for Remote Insight Lights-Out Edition II requires extending the Active Directory schema. Extending the schema must be completed by an Active Directory Schema Administrator.

Directory Services Support

RILOE II supports the following directory services:

- Microsoft® Active Directory
- Microsoft® Windows® Server 2003 Active Directory

- Novell eDirectory 8.6.2
- Novell eDirectory 8.7

The RILOE II software is designed to run within the Microsoft® Active Directory Users and Computers and Novell ConsoleOne management tools, allowing you to manage user accounts on Microsoft Active Directory or Novell eDirectory. This solution makes no distinction between eDirectory running on NetWare, Linux, or Windows®. To spawn an eDirectory schema extension requires Java 1.4.0 or later for SSL authentication.

RILOE II supports Microsoft® Active Directory running on one of the following operating systems:

- Windows® 2000
- Windows® 2000 Advanced Server
- Windows® 2003 Server

RILOE II supports Microsoft® Windows® Server 2003 Active Directory running on Windows® 2003 Server.

RILOE II supports eDirectory 8.6.2 and 8.7 running on one of the following operating systems:

- Windows® 2000
- Windows® 2000 Advanced Server
- Windows® 2003 Server
- NetWare 5.X
- NetWare 6.X
- Red Hat Enterprise Linux AS 2.1
- Red Hat Linux 7.3
- Red Hat Linux 8.0

Required Software

RILOE II requires specific software, which will extend the schema and provide snap-ins to manage your RILOE II network. An HP Smart Component is available for download that contains the schema installer and the management snap-in installer. The HP Smart Component can be downloaded from the HP website (<http://www.hp.com/servers/lights-out>).

Schema Installer

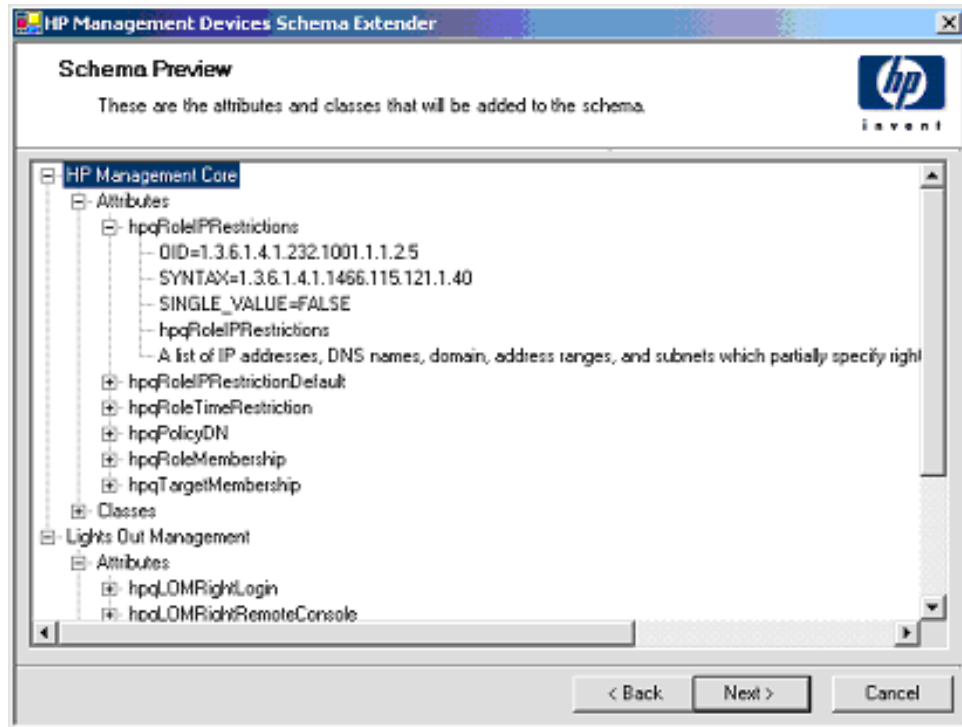
Bundled with the schema installer are one or more .xml files. These files contain the schema that will be added to the directory. Typically, one of these files will contain core schema that is common to all the supported directory services. Additional files contain only product-specific schemas. The schema installer requires the use of the .NET framework.

The installer includes three important screens:

- Schema Preview
- Setup
- Results

Schema Preview

The **Schema Preview** screen allows the user to view the proposed extensions to the schema. This screen reads the selected schema files, parses the XML, and displays it as a tree view. It lists all of the details of the attributes and classes that will be installed.



Setup

The **Setup** screen is used to enter the appropriate information before extending the schema.

The **Directory Server** section of the **Setup** screen allows you to select whether you will be using Active Directory or eDirectory, and to set the computer name and the port to be used for LDAP communications.

IMPORTANT: Extending the schema on **Active Directory** requires that the user be an authenticated Schema Administrator, that the schema is not write protected, and the directory is the FSMO role owner in the tree. The installer will attempt to make the target directory server the FSMO Schema Master of the forest.

To get write access to the schema on Windows® 2000 requires a change to the registry safety interlock. If the user selects the **Active Directory** option, the schema extender will attempt to make the registry change. It will only succeed if the user has rights to do this. Write access to the schema is automatically enabled on Windows® 2003.

The **Directory Login** section of the **Setup** screen allows you to enter your login name and password. These may be required to complete the schema extension. The **Use SSL during authentication** option sets the form of secure authentication to be used. If selected, directory authentication using SSL is used. If not selected, NT authentication is used. If **eDirectory** is not selected, authentication and the schema extension process is in clear text.

HP Management Devices Schema Extender

Setup
The wizard needs to know about the directory you will be accessing.

Directory Server

☒ Active Directory ☐ eDirectory

Name: compeq-2lozeval

Port: 636

Directory Login

Login Name: JPDOMAIN_LAB\Administrator

Password:

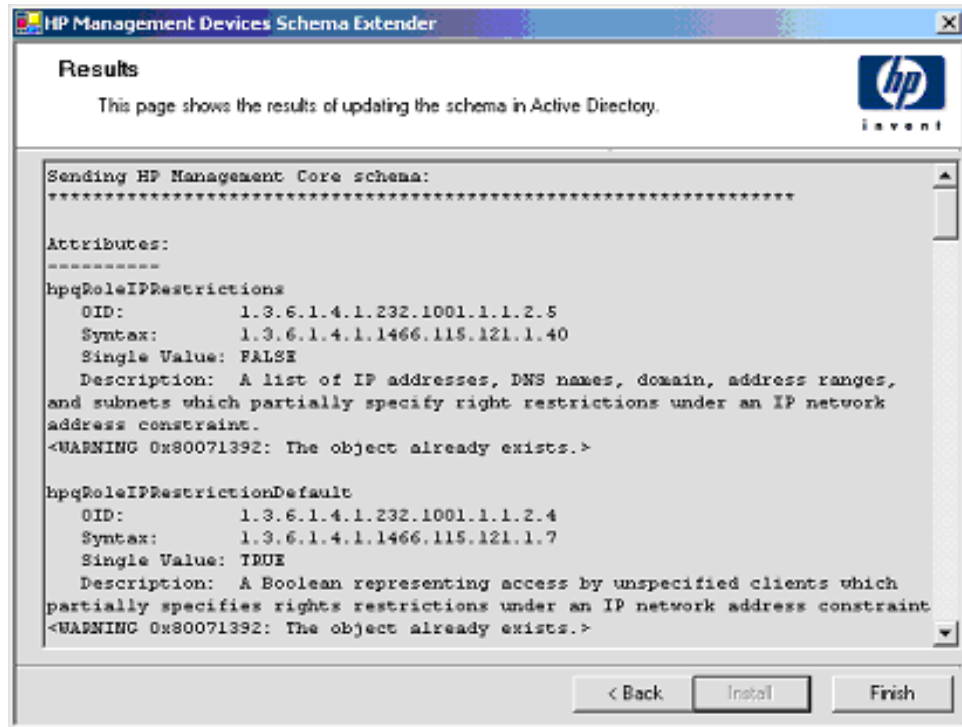
☐ Use SSL during authentication.

When you press the "Install" button, the wizard will begin extending the schema.

< Back Install Cancel

Results

The **Results** screen displays the results of the installation, including whether the schema could be extended and what attributes were changed.



Management Snap-In Installer

The management snap-in installer installs snap-ins for managing RILOE II users in Microsoft® MMC and Novell ConsoleOne.

The RILOE II snap-in is designed to run on any system that has the Users and Computers snap-in installed. The RILOE II snap-ins are used to perform the following tasks in creating a RILOE II directory:

- Creating and managing the RILOE II and role objects (policy objects will be supported at a later date).

- Making the associations between RILOE II objects and the role (or policy) objects.

Directory Services for Active Directory

The following sections provide installation prerequisites, preparation, and a working example of Directory Services for Active Directory.

Active Directory Installation Prerequisites

Directory Services for RILOE II uses LDAP over SSL to communicate with the directory servers. Before installing snap-ins and schema for Active Directory, you should read and have available the following documentation:

IMPORTANT: Installing Directory Services for Remote Insight Lights-Out Edition II requires extending the Active Directory schema. Extending the schema must be completed by an Active Directory Schema Administrator.

- *Extending the Schema* in the Microsoft® Windows® 2000 Server Resource Kit, available at <http://msdn.microsoft.com>
- *Installing Active Directory* in the Microsoft® Windows® 2000 Server Resource Kit
- Microsoft® Knowledge Base Articles
 - 216999 *Installing the remote server administration tools in Windows® 2000*
 - 314978 *Using the Adminpak.msi to install a server administration tool in Windows® 2000*
 - 247078 *Enabling SSL communication over LDAP for Windows® 2000 domain controllers*
 - 321051 *Enabling LDAP over SSL with a third-party certificate authority*

Directory Services Preparation for Active Directory

To set up directory services for use with the RILOE II boards:

1. Install Active Directory. For more information, refer to *Installing Active Directory* in the Microsoft® Windows® 2000 Server Resource Kit.
2. Install the Microsoft® Admin Pack (the ADMINPAK.MSI file, which is located in the i386 subdirectory of the Windows® CD). For more information, refer to the Microsoft® Knowledge Base Article 216999.
3. In Windows® 2000, the safety interlock that prevents accidental writes to the schema needs to be temporarily disabled. The schema extender utility will be able to do this if the remote registry service is running and the user has sufficient rights. This can also be done by setting *HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Parameters\Schema Update Allowed* in the registry to a non-zero value (refer to the "Order of Processing When Extending the Schema" section of *Installation of Schema Extensions* in the Windows® 2000 Server Resource Kit) or by the following steps.

NOTE: This step is not necessary if you are using Windows® 2003 Server.

- a. Start MMC.
 - b. Install the Active Directory Schema snap-in in MMC.
 - c. Right-click **Active Directory Schema** and select **Operations Master**.
 - d. Select **The Schema may be modified on this Domain Controller**.
 - e. Click **OK**.
- NOTE:** The **Active Directory Schema** folder may need to be expanded for the check box to be available.
4. Create a certificate or install Certificate Services. It is necessary to create a certificate or install Certificate Services because RILOE II communicates with Active Directory using SSL. Active Directory must be installed before installing Certificate Services.
 5. To specify that a certificate be issued to the server running active directory, do the following:
 - a. Launch Microsoft Management Console on the server and add the default domain policy snap-in (Group Policy, then browse to Default domain policy object).
 - b. Click **Computer Configuration, Windows Settings, Security Settings, Public Key Policies**.

- c. Right-click **Automatic Certificate Requests Settings**, and select **new, automatic certificate request**.
 - d. Using the wizard, select the domain controller template, and the certificate authority you want to use.
6. Download the Smart Component, which contains the installers for the schema extender and the snap-ins. The Smart Component can be downloaded from the HP website (<http://www.hp.com/servers/lights-out>).
 7. Run the schema installer application to extend the schema, which extends the directory schema with the proper HP objects.

NOTE: The schema installer associates the Active Directory snap-ins with the new schema. The snap-in installation setup utility is a Windows MSI setup script and will run anywhere MSI is supported (Windows® XP, Windows® 2000, Windows® 98). However, some parts of the schema extension application require the .NET Framework, which can be downloaded from www.microsoft.com.

Snap-in Installation and Initialization for Active Directory

1. Run the snap-in installation application to install the snap-ins.
2. Configure the directory service to have the appropriate objects and relationships for RILOE II management.
 - a. Use the management snap-ins from HP to create RILOE II, Policy, Admin, and User Role objects.
 - b. Use the management snap-ins from HP to build associations between the RILOE II object, the policy object, and the role object.
 - c. Point the RILOE II object to the Admin and User role objects (Admin and User roles will automatically point back to the RILOE II object).

NOTE: For more information on Remote Insight Lights-Out Edition II objects, see "Directory Services Objects".

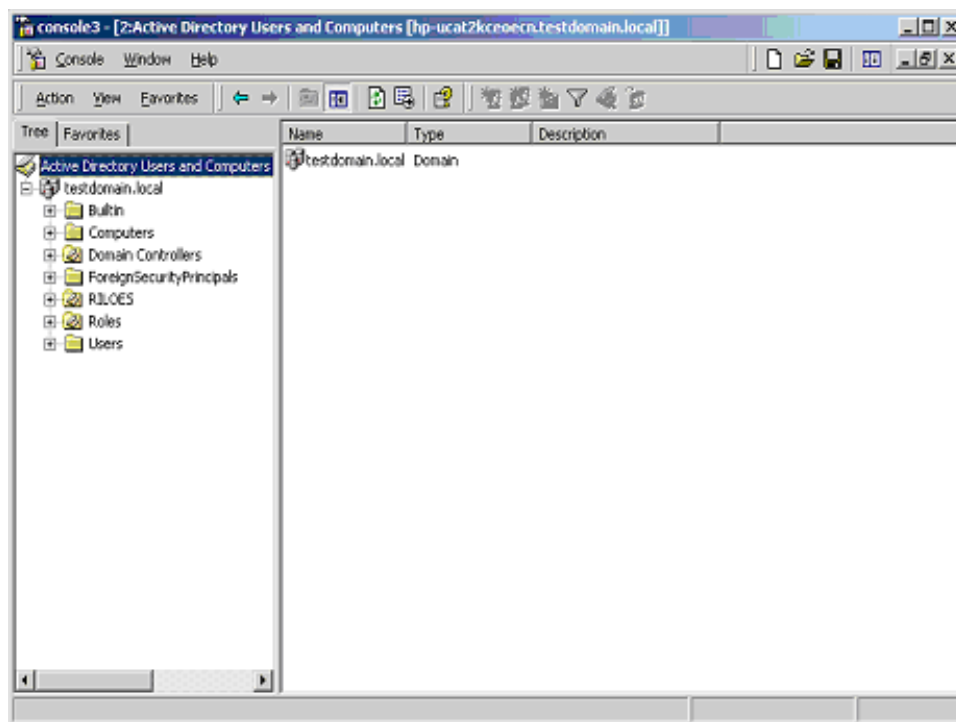
At a minimum, you need to create:

- One ROLE object that will contain one or more users and one or more RILOE II objects.
- One RILOE II object corresponding to each RILOE II board that will be using the directory.

Example: Creating and Configuring Directory Objects for Use with RILOE II in Active Directory

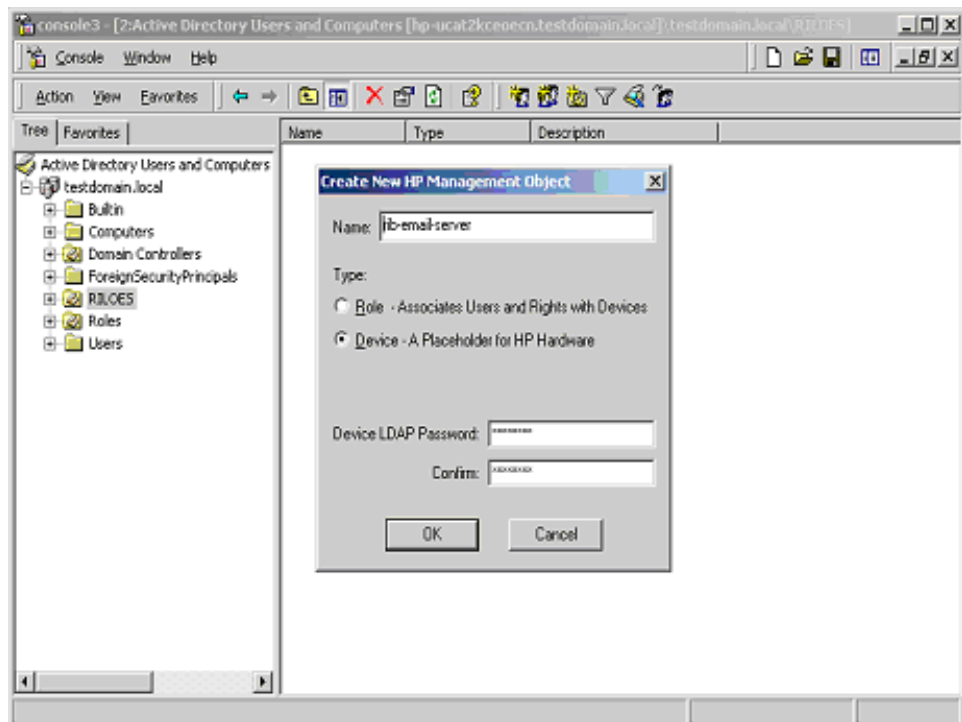
The following example shows how to set up roles and HP devices in an enterprise directory with the domain *testdomain.local*, which consists of two organizational units, *Roles* and *RILOES*.

Assume that a company has an enterprise directory including the domain *testdomain.local* arranged as shown in the following screen.



1. Create an organizational unit, which will contain the Lights-Out Devices managed by the domain. In this example, two organizational units are created called *Roles* and *RILOES*.
2. Use the HP provided Active Directory Users and Computers snap-ins to create Lights-Out Management objects in the *RILOES* organizational unit for several RILOE II devices.

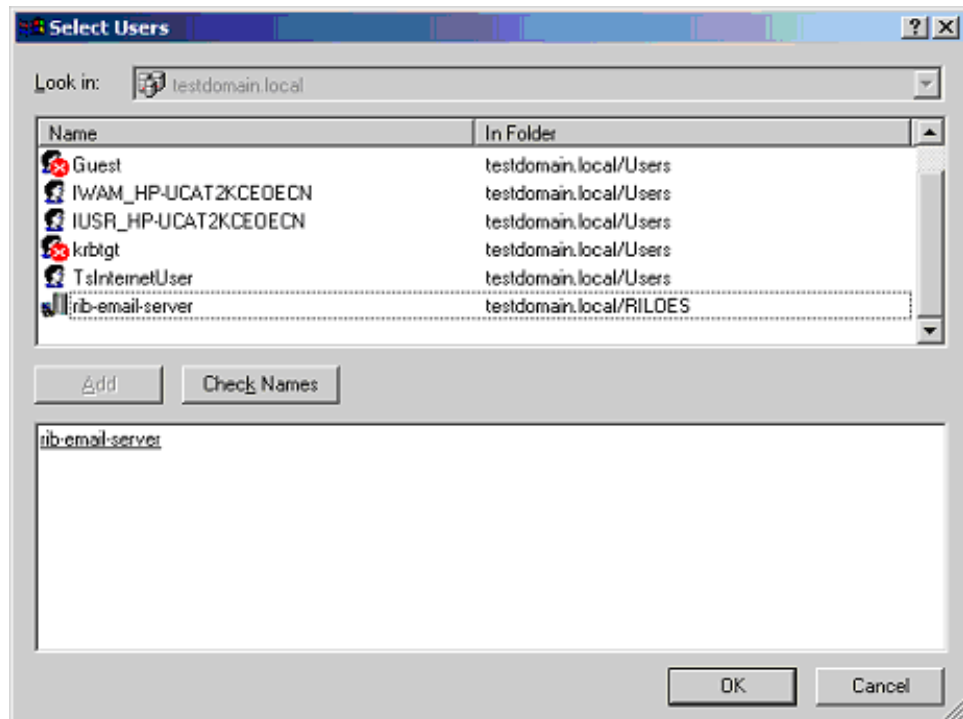
- a. Right-click the **RILOES** organizational unit found in the *testdomain.local* domain, and select **NewHPObject**.
- b. Select **Device** for the type on the **Create New HP Management Object** dialog box.
- c. Enter an appropriate name in the **Name** field of the dialog box. In this example, the DNS host name of the RILOE II device, *rib-email-server*, will be used as the name of the Lights-Out Management object, and the surname will be *RILOEII*.
- d. Enter and confirm a password in the **Device LDAP Password** and **Confirm** fields. The device will use this password to authenticate to the directory, and should be unique to the device. This password is the password that is used in the **Directory Settings** screen of the RILOE II.
- e. Click **OK**.



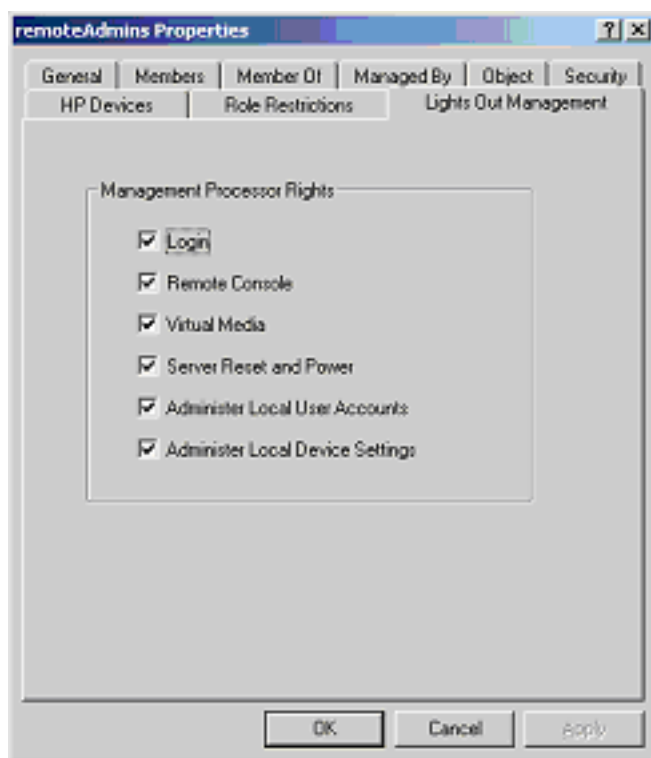
3. Use the HP provided Active Directory Users and Computers snap-ins to create HP Role objects in the *Roles* organizational unit.

- a. Right-click the **Roles** organizational unit, select **New** then **Object**.
 - b. Select **Role** for the type field in the **Create New HP Management Object** dialog box.
 - c. Enter an appropriate name in the **Name field** of the **New HP Management Object** dialog box. In this example, the role will contain users trusted for remote server administration and will be called *remoteAdmins*. Click **OK**.
 - d. Repeat the process, creating a role for remote server monitors called *remoteMonitors*.
4. Use the HP provided Active Directory Users and Computers snap-ins to assign the roles rights, and associate the roles with users and devices.
 - a. Right-click the **remoteAdmins** role in the Roles organizational unit in the *testdomain.local* domain, and select **Properties**.
 - b. Select the **HP Devices** tab, then click **Add**.

- c. Using the **Select Users** dialog box, select the Lights-Out Management object created in step 2, *rib-email-server* in folder *testdomain.local/RILOES*. Click **OK** to close the dialog, then click **Apply** to save the list.



- d. Add users to the role. Click the **Members** tab, and add users using the **Add** button and the **Select Users** dialog box.



5. The devices and users are now associated. Use the **Lights Out Management** tab to set the rights for the role. All users and groups within a role will have the rights assigned to the role on all of the RILOE II devices managed by the role. In this example, the users in the *remoteAdmins* role will be given full access to the RILOE II functionality. Select the boxes next to each right, and then click **Apply**. Click **OK** to close the property sheet.
6. Using the same procedure as in step 4, edit the properties of the *remoteMonitors* role, add the *rib-email-server* device to the **Managed Devices** list on the **HP Devices** tab, and add users to the *remoteMonitors* role using the **Members** tab. Then, on the **Lights Out Management** tab, select the box next to the **Login**. Click **Apply** and **OK**. Members of the *remoteMonitors* role will be able to authenticate and view the server status.

User rights to any Remote Insight Lights-Out Edition II device are calculated as the sum of all the rights assigned by all the roles in which the user is a member, and in which the Remote Insight Lights-Out Edition II device is a Managed Device. Following the preceding examples, if a user is in both the *remoteAdmins* and *remoteMonitors* roles, they will have all the rights, because the *remoteAdmins* role has those rights.

To configure a Remote Insight Lights-Out Edition II device and associate it with a Lights-Out Management object used in this example, use settings similar to the following on the **Directory Settings** screen.

```
RIB Object DN = cn=rib-email-  
server,ou=RILOES,dc=testdomain,dc=local  
Directory User Context 1 =  
cn=Users,dc=testdomain,dc=local
```

For example, to gain access, user *Mel Moore*, with the unique ID *MooreM*, located in the users organizational unit within the *testdomain.local* domain, who is also a member of one of the *remoteAdmins* or *remoteMonitors* roles, would be allowed to log in to the RILOE II. They would type *testdomain\moorem*, or *moorem@testdomain.local*, or *Mel Moore*, in the **Login Name** field of the RILOE II login screen, and use their Active Directory password in the **Password** field of that screen.

Directory Services Objects for Active Directory

One of the keys to directory-based management is proper virtualization of the managed devices in the directory service. This virtualization allows the administrator to build relationships between the managed device and user or groups already contained within the directory service. User management of a Remote Insight Lights-Out Edition II requires three basic objects in the directory service:

- Lights-Out Management object
- Role object
- User objects

Each object represents a device, user, or relationship that is required for directory-based management.

NOTE: After the snap-ins are installed, ConsoleOne and MMC must be restarted to show the new entries.

After the snap-in is installed, Remote Insight Lights-Out Edition II objects and Remote Insight Lights-Out Edition II roles can be created in the directory. Using the Users and Computers tool, the user will:

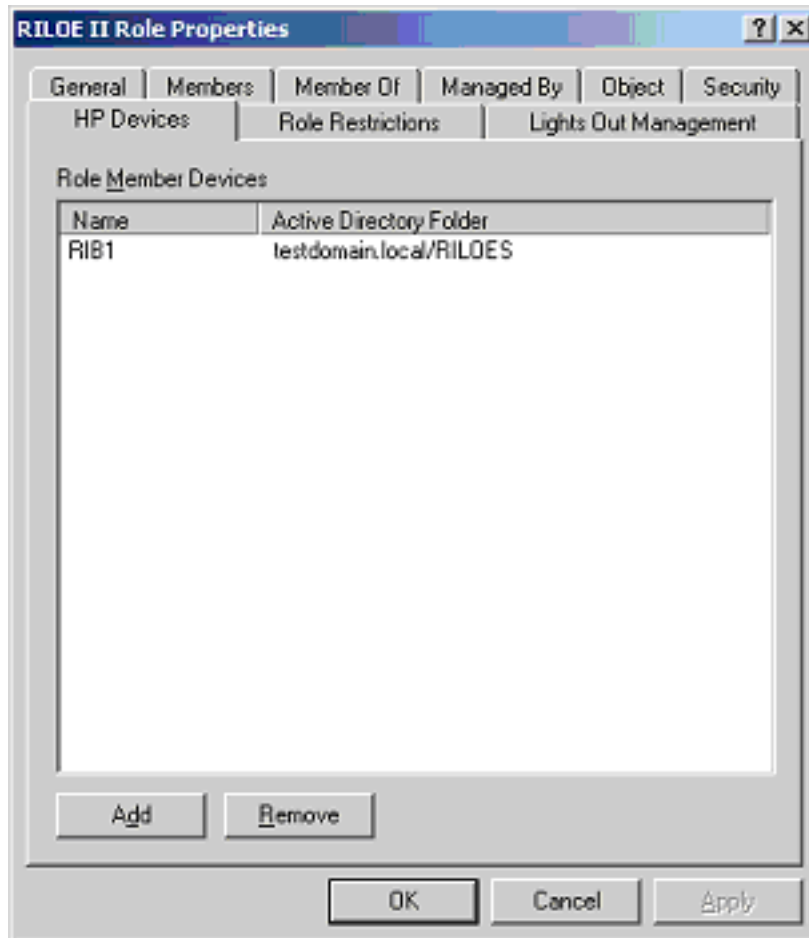
- Create the Remote Insight Lights-Out Edition II and role objects.
- Add users to the role objects.
- Set the rights and restrictions of the role objects.

Active Directory Snap-Ins

The following sections discuss the additional management options available within Active Directory Users and Computers after the HP snap-ins have been installed.

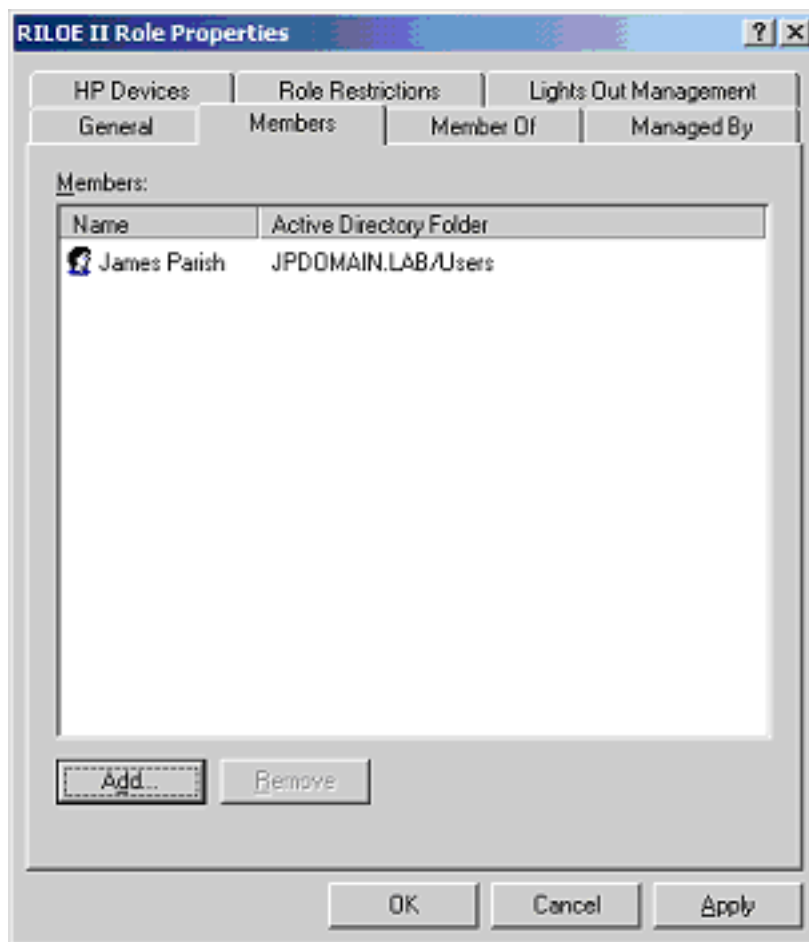
HP Devices

The **HP Devices** tab is used to add the HP devices to be managed within a role. Clicking **Add** allows you to browse to a specific HP device and add it to the list of member devices. Clicking **Remove** allows you to browse to a specific HP device and remove it from the list of member devices.



Members

After user objects are created, the **Members** tab allows you to manage the users within the role. Clicking **Add** allows you to browse to the specific user you want to add. Highlighting an existing user and clicking **Remove** removes the user from the list of valid members.



Role Restrictions

The **Role Restrictions** subtab allows you to set login restrictions for the role. These restrictions include:

- Time Restrictions
- IP Network Address Restrictions
 - IP/Mask
 - IP Range
- DNS Name

The screenshot shows the 'RILOE II Role Properties' dialog box with the 'Role Restrictions' tab selected. The dialog has a title bar with a question mark and a close button. Below the title bar are four tabs: 'General', 'Members', 'Member Of', and 'Managed By'. The 'Role Restrictions' tab is active, showing three sub-tabs: 'HP Devices', 'Role Restrictions', and 'Lights Out Management'. The 'Role Restrictions' sub-tab is selected, displaying the following content:

Time Restrictions:
Effective Hours

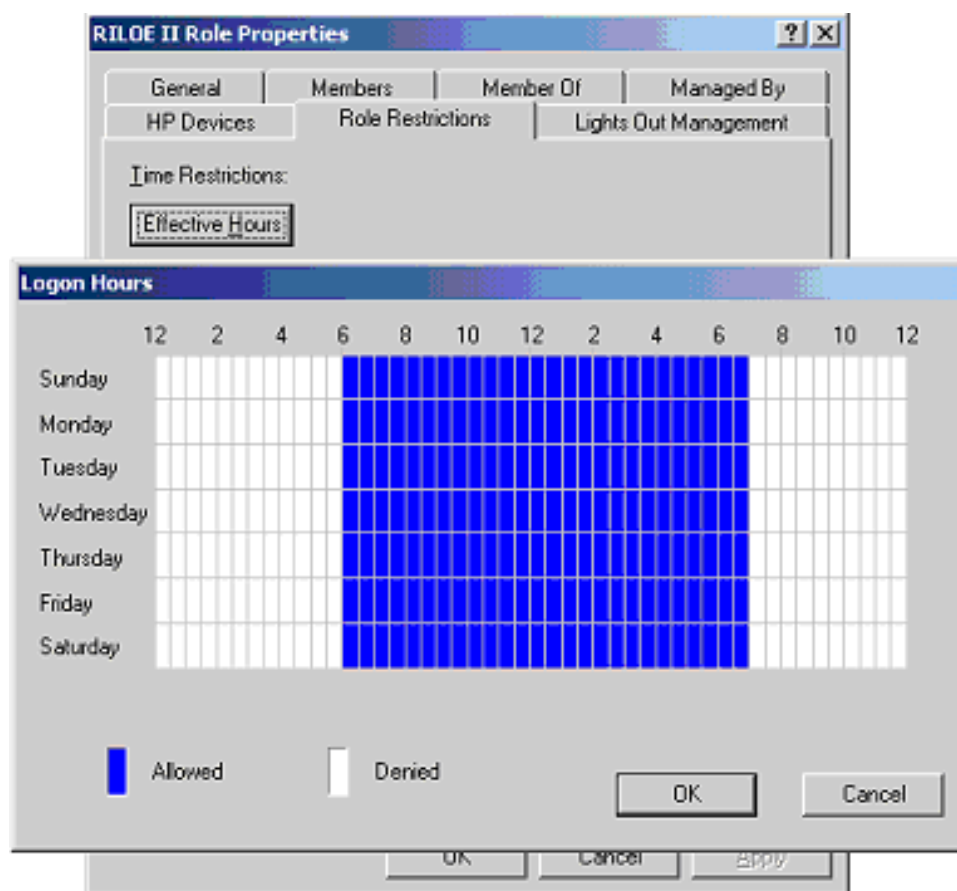
IP Network Address Restrictions:
By Default, Grant access from all clients, EXCEPT those listed below.

Below the text is a large empty rectangular box for listing exceptions.

At the bottom of the dialog, there are three radio buttons for selecting the restriction type: ☒ IP/MASK, ☐ IP Range, and ☐ DNS Name. To the right of these are 'Add' and 'Remove' buttons. At the very bottom are 'OK', 'Cancel', and 'Apply' buttons.

Time Restrictions

You can manage the hours available for logon by members of the role by clicking **Effective Hours** in the **Role Restrictions** tab. In the **Logon Hours** popup window, you can select the times available for logon for each day of the week in half-hour increments. You can change a single square by clicking it, or a section of squares by clicking and holding the mouse button, dragging the cursor across the squares to be changed, and releasing the mouse button. The default setting is to allow access at all times.



Enforced Client IP Address or DNS Name Access

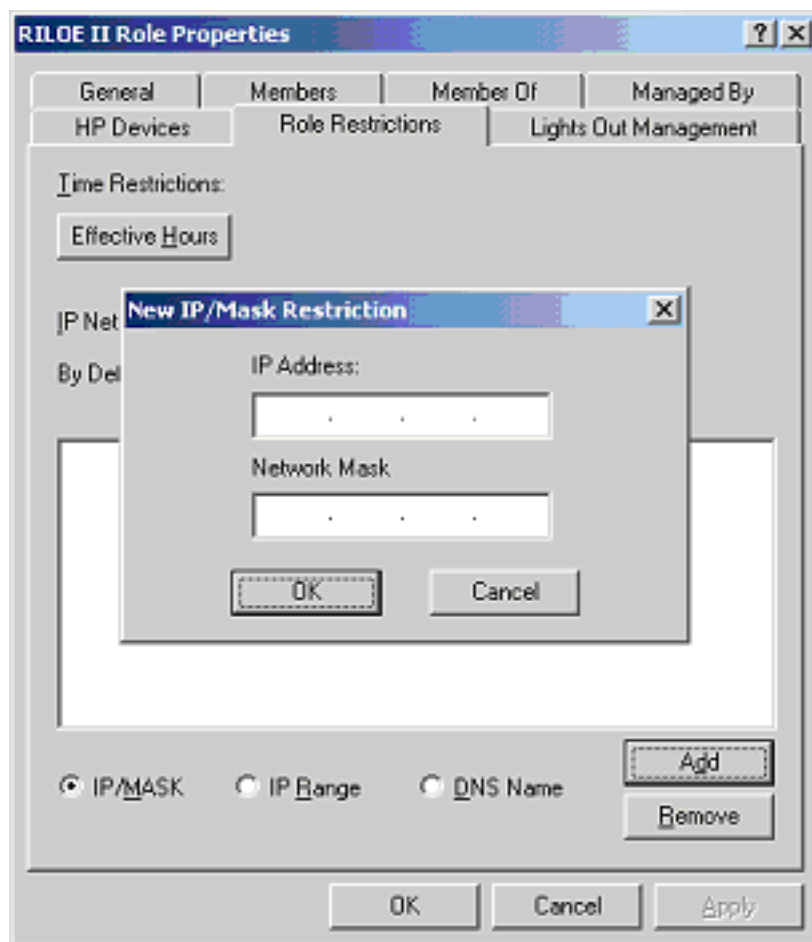
Access can be granted or denied to an IP address, IP address range, or DNS names.

1. In the **By Default** drop-down menu, select whether to **Grant** or **Deny** access from all addresses except the specified IP addresses, IP address ranges, and DNS names.
2. Select the addresses to be added, select the type of restriction, and click **Add**.
3. In the new restriction popup window, enter the information and click **OK**. The new restriction popup window displays.

NOTE: The **DNS Name** option allows you to restrict access based on a single DNS name or a subdomain, entered in the form of host.company.com or *.domain.company.com.

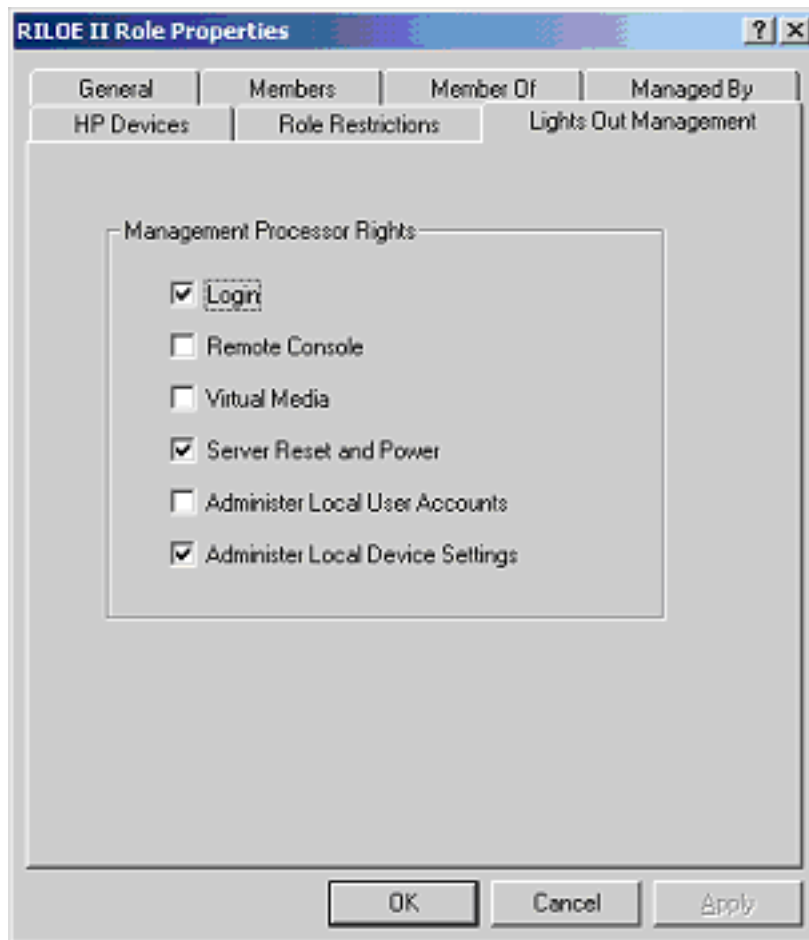
4. Click **OK** to save the changes.

5. To remove any of the entries, highlight the entry in the display list and click **Remove**.



Active Directory Lights-Out Management

After a role is created, rights for the role can be selected. Users and group objects can now be made members of the role, giving the users or group of users the rights granted by the role. Rights are managed on the **Lights Out Management** tab.



The available rights are:

- **Login**—This option controls whether users can to log in to the associated devices.

Login access can be used to create a user who is a service provider and who receives alerts from the board but does not have login access to the RILOE II.

- **Remote Console**—This option allows the user access to the Remote Console.
- **Virtual Media**—This option allows the user access to the RILOE II Virtual Floppy and Virtual Media functionality.
- **Server Reset and Power**—This option allows the user to remotely reset the server or power it down.
- **Administer Local User Accounts**—This option allows the user to administer accounts. The user can modify their account settings, modify other user account settings, add users, and delete users.
- **Administer Local Device Settings**—This option allows the user to configure the RILOE II board settings. These settings include the options available on the **Global Settings**, **Network Settings**, **SNMP Settings**, and **Directory Settings** screens of the RILOE II Web browser.

Directory Services for eDirectory

The following sections provide installation prerequisites, preparation, and a working example of Directory Services for eDirectory.

eDirectory Installation Prerequisites

Directory Services for RILOE II uses LDAP over SSL to communicate with the directory servers. The RILOE II software is designed to install in an eDirectory version 8.6.1 (and above) tree. HP does not recommend installing this product if you have eDirectory servers with a version less than eDirectory 8.6.1. Before installing snap-ins and schema extensions for eDirectory, you should read and have available the following technical information documents, available at Novell Support (<http://support.novell.com>).

IMPORTANT: Installing Directory Services for Remote Insight Lights-Out Edition II requires extending the eDirectory schema. Extending the schema must be completed by a Schema Administrator.

- TID10066591 *Novell eDirectory 8.6 NDS compatibility*

- TID10057565 *Unknown objects in a mixed environment*
- TID10059954 *How to test whether LDAP is working correctly*
- TID10023209 *How to configure LDAP for SSL (secure) connections*
- TID10075010 *How to test LDAP authentication*

Snap-in Installation and Initialization for eDirectory

1. Run the snap-in installation application to install the snap-ins.
2. Configure the directory service to have the appropriate objects and relationships for RILOE II management.
 - a. Use the management snap-ins from HP to create RILOE II, Policy, Admin, and User Role objects.
 - b. Use the management snap-ins from HP to build associations between the RILOE II object, the policy object, and the role object.
 - c. Point the RILOE II object to the Admin and User role objects (Admin and User roles will automatically point back to the RILOE II object).

NOTE: For more information on Remote Insight Lights-Out Edition II objects, see "Directory Services Objects".

At a minimum, you need to create:

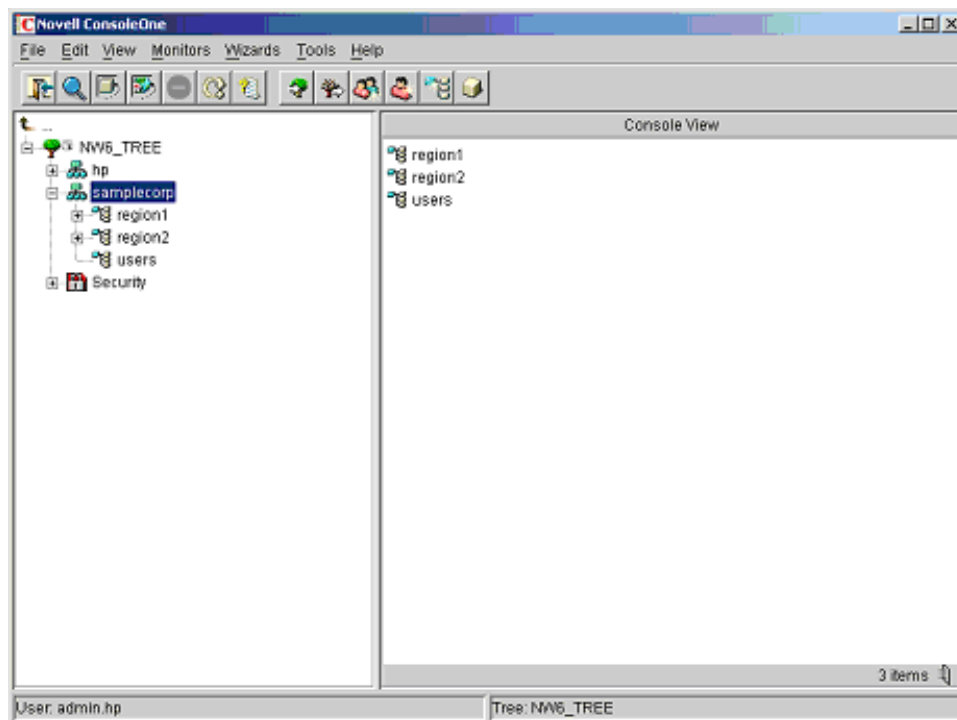
- One ROLE object that will contain one or more users and one or more RILOE II objects.
 - One RILOE II object corresponding to each RILOE II board that will be using the directory.

NOTE: After the snap-ins are installed, ConsoleOne and MMC must be restarted to show the new entries.

Example: Creating and Configuring Directory Objects for Use with RILOE II in eDirectory

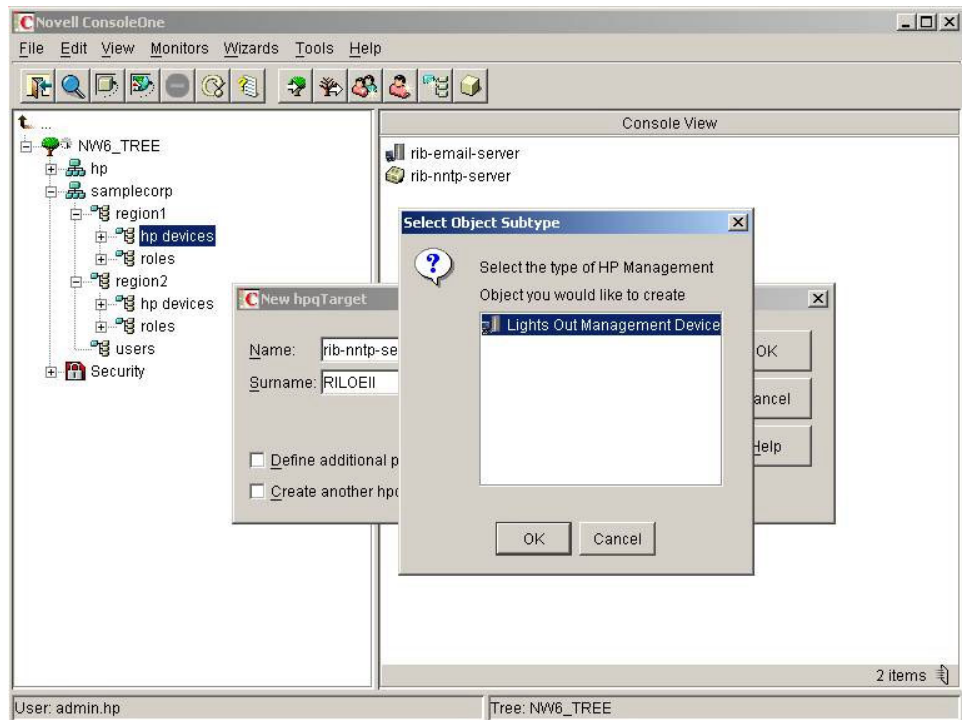
The following example shows how to set up roles and HP devices in a company called *samplecorp*, which consist of two regions, *region1* and *region2*.

Assume *samplecorp* has an enterprise directory arranged according to the following screen.



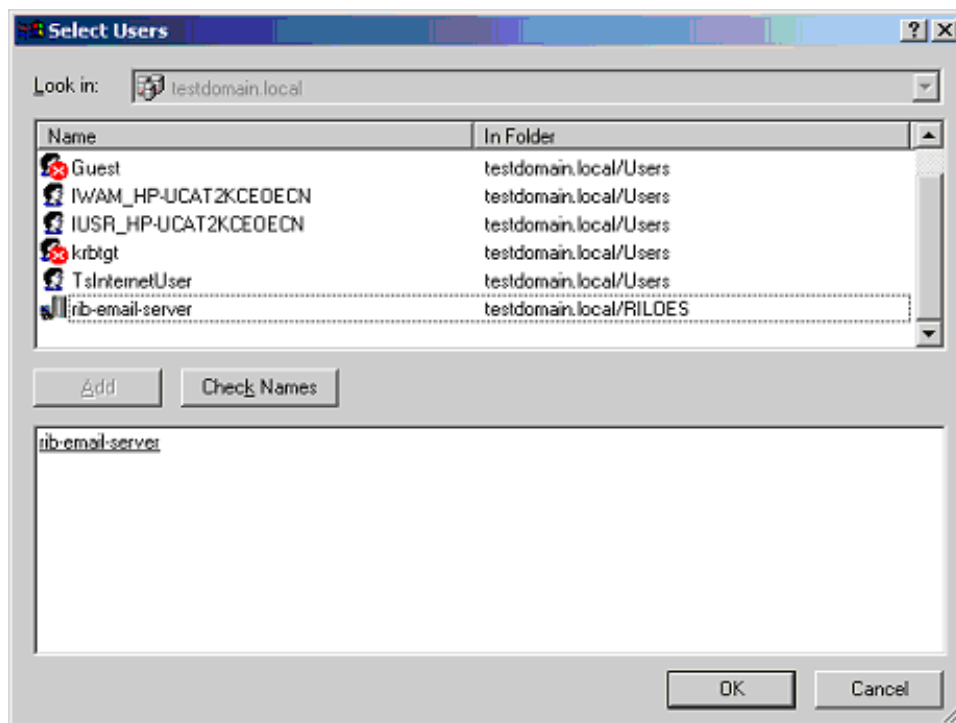
1. Begin by creating organizational units in each region, which will contain the Lights-Out Management devices and roles specific to that region. In this example, two organizational units are created, called *roles* and *hp devices*, in each organizational unit, *region1* and *region2*.
2. Use the HP provided ConsoleOne snap-ins to create Lights-Out Management objects in the *hp devices* organizational unit for several RILOE II devices.
 - a. Right-click the *hp devices* organizational unit found in the *region1* organizational unit, and select **New** then **Object**.
 - b. Select **hpqTarget** from the list of classes and click **OK**.
 - c. Enter an appropriate name and surname in the **New hpqTarget** dialog box. In this example, the DNS host name of the RILOE II device, *rib-email-server* will be used as the name of the Lights-Out Management object, and the surname will be *RILOEII*. Click **OK**.

- d. The **Select Object Subtype** dialog box is displayed. Select **Lights Out Management Device** from the list, and click **OK**.
- e. Repeat the process for several more RILOE II devices with DNS names *rib-nntp-server* and *rib-file-server-users1* in *hp devices* under *region1*, and *rib-file-server-users2* and *rib-app-server* in *hp devices* under *region2*.

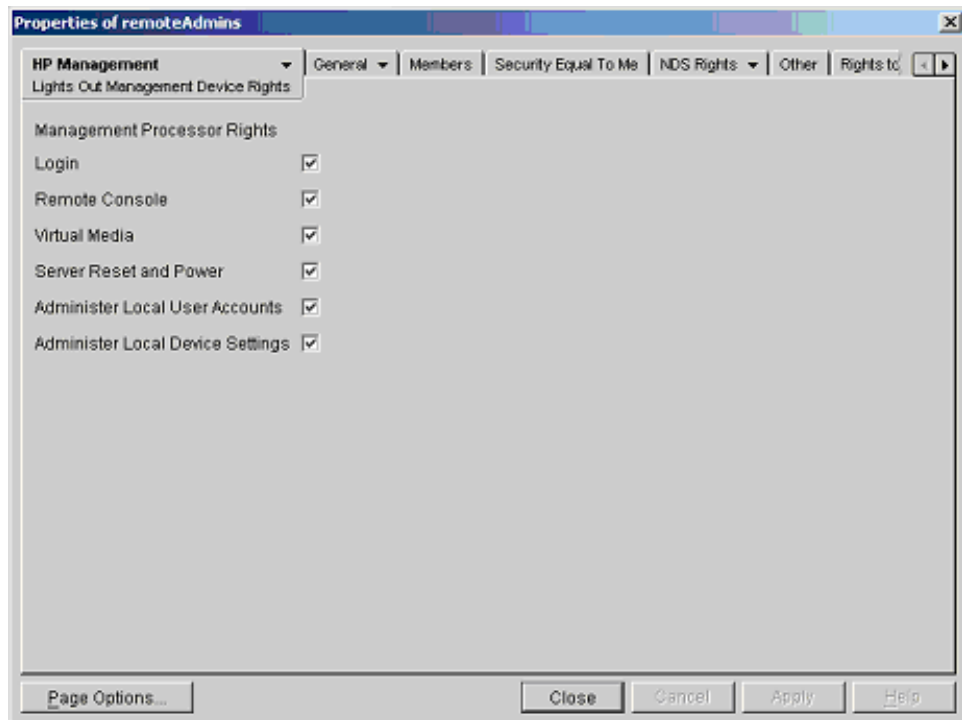


3. Use the HP provided ConsoleOne snap-ins to create HP Role objects in the *roles* organizational units.
 - a. Right-click the *roles* organizational unit found in the *region2* organizational unit, and select **New** then **Object**.
 - b. Select **hpqRole** from the list of classes and click **OK**.
 - c. Enter an appropriate name in the **New hpqRole** dialog box. In this example, the role will contain users trusted for remote server administration and will be named *remoteAdmins*. Click **OK**.

- d. The **Select Object Subtype** dialog box is displayed. Because this role will be managing the rights to Lights-Out Management devices, select **Lights Out Management Devices** from the list, and click **OK**.
 - e. Repeat the process, creating a role for remote server monitors, named *remoteMonitors*, in *roles* in *region1*, and a *remoteAdmins* and a *remoteMonitors* role in *roles* in *region2*.
 4. Use the HP provided ConsoleOne snap-ins to assign rights to the role and associate the roles with users and devices.
 - a. Right-click on the *remoteAdmins* role in the *roles* organizational unit in the *region1* organizational unit, and select **Properties**.
 - b. Select the **Role Managed Devices** subtab of the **HP Management** tab, and click **Add**.



- c. Using the **Select Objects** dialog box, browse to the *hp devices* organizational unit in the *region1* organizational unit. Select the three Lights-Out Management objects created in step 2. Click **OK**, then click **Apply**.
- d. Next, add users to the role. Click the **Members** tab, and add users using the **Add** button and the **Select Object** dialog box.
- e. The devices and users are now associated. Use the **Lights Out Management Device Rights** subtab of the **HP Management** tab to set the rights for the role. All users within a role will have the rights assigned to the role on all of the RILOE II devices managed by the role. In this example, the users in the *remoteAdmins* role will be given full access to the RILOE II functionality. Select the boxes next to each right, and click **Apply**. Click **Close** to close the property sheet.



5. Using the same procedure as in step 4, edit the properties of the *remoteMonitors* role:

- a. Add the three RILOE II devices within *hp devices* under *region1* to the **Managed Devices** list on the **Role Managed Devices** subtab of the **HP Management** tab.
- b. Add users to the *remoteMonitors* role using the **Members** tab.
- c. Then, using the **Lights Out Management Device Rights** subtab of the **HP Management** tab, select the check box next to **Login**, and click **Apply** and **Close**. Members of the *remoteMonitors* role will be able to authenticate and view the server status.

User rights to any Remote Insight Lights-Out Edition II device are calculated as the sum of all the rights assigned by all the roles in which the user is a member, and in which the Remote Insight Lights-Out Edition II device is a Managed Device. Following the preceding examples, if a user is in both the *remoteAdmins* and *remoteMonitors* roles, they will have all the rights, because the *remoteAdmins* role has those rights.

To configure a Remote Insight Lights-Out Edition II device and associate it with a Lights-Out Management object used in this example, use settings similar to the following on the **Directory Settings** screen.

NOTE: Commas, not periods, are used in LDAP distinguished names to separate each component.

```
RIB Object DN = cn=rib-email-server,ou=hp  
devices,ou=region1,o=samplecorp  
Directory User Context 1 = ou=users,o=samplecorp
```

For example, user *CSmith*, located in the *users* organizational unit within the *samplecorp* organization, who is also a member of one of the *remoteAdmins* or *remoteMonitors* roles, would be allowed to log in to the RILOE II. They would type *csmith* (case insensitive) in the **Login Name** field of the RILOE II login screen and use their eDirectory password in the **Password** field of that screen to gain access.

Directory Services Objects for eDirectory

One of the keys to directory-based management is proper virtualization of the managed devices in the directory service. This virtualization allows the administrator to build relationships between the managed device and user or groups already contained within the directory service. User management of a Remote Insight Lights-Out Edition II requires three basic objects in the directory service:

- Lights-Out Management object
- Role object
- User objects

Each object represents a device, user, or relationship that is required for directory-based management.

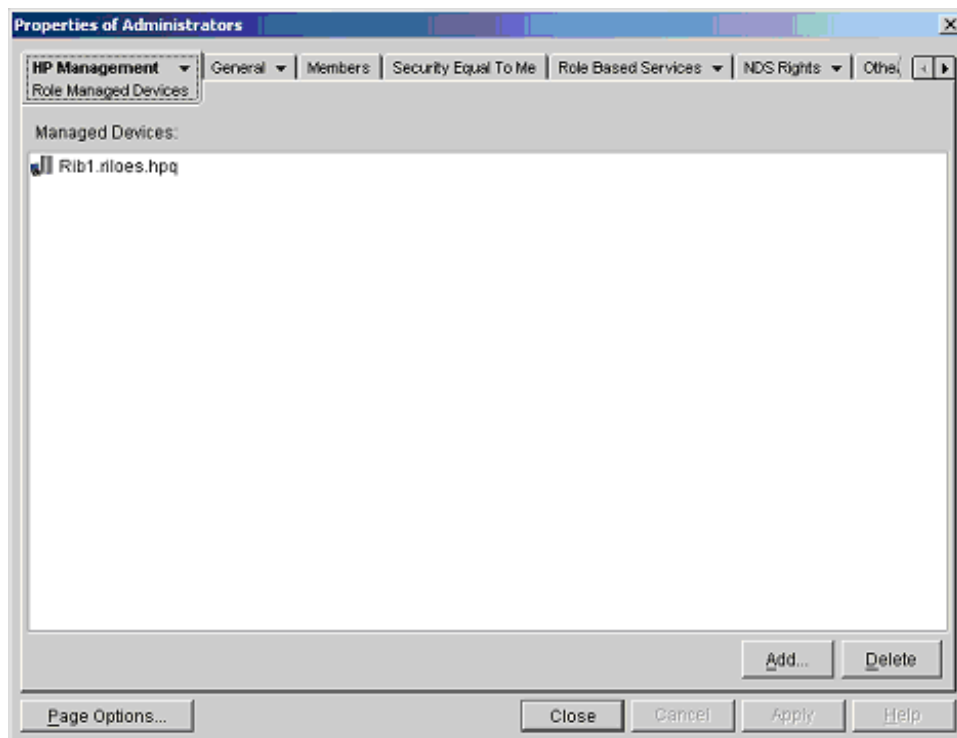
NOTE: After the snap-ins are installed, ConsoleOne and MMC must be restarted to show the new entries.

After the snap-in is installed, Remote Insight Lights-Out Edition II objects and Remote Insight Lights-Out Edition II roles can be created in the directory. Using the Users and Computers tool, the user will:

- Create the Remote Insight Lights-Out Edition II and role objects.
- Add users to the role objects.
- Set the rights and restrictions of the role objects.

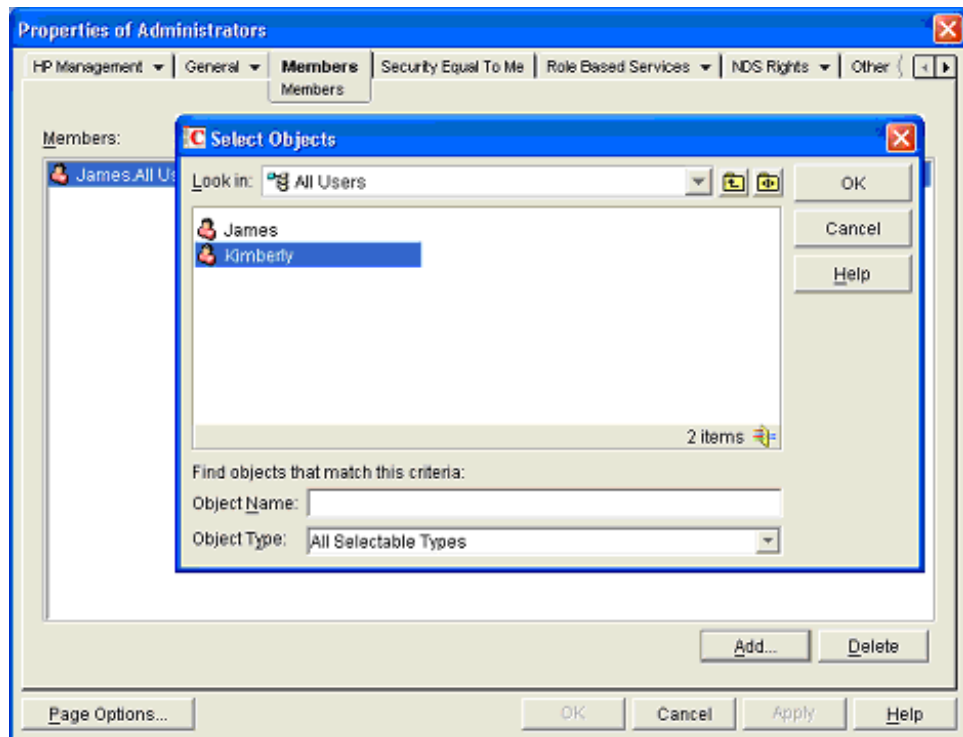
Role Managed Devices

The **Role Managed Devices** subtab under the **HP Management** tab is used to add the HP devices to be managed within a role. Clicking **Add** allows you to browse to the specific HP device and add it as a managed device.



Members

After user objects are created, the **Members** tab allows you to manage the users within the role. Clicking **Add** allows you to browse to the specific user you want to add. Highlighting an existing user and clicking **Delete** removes the user from the list of valid members.

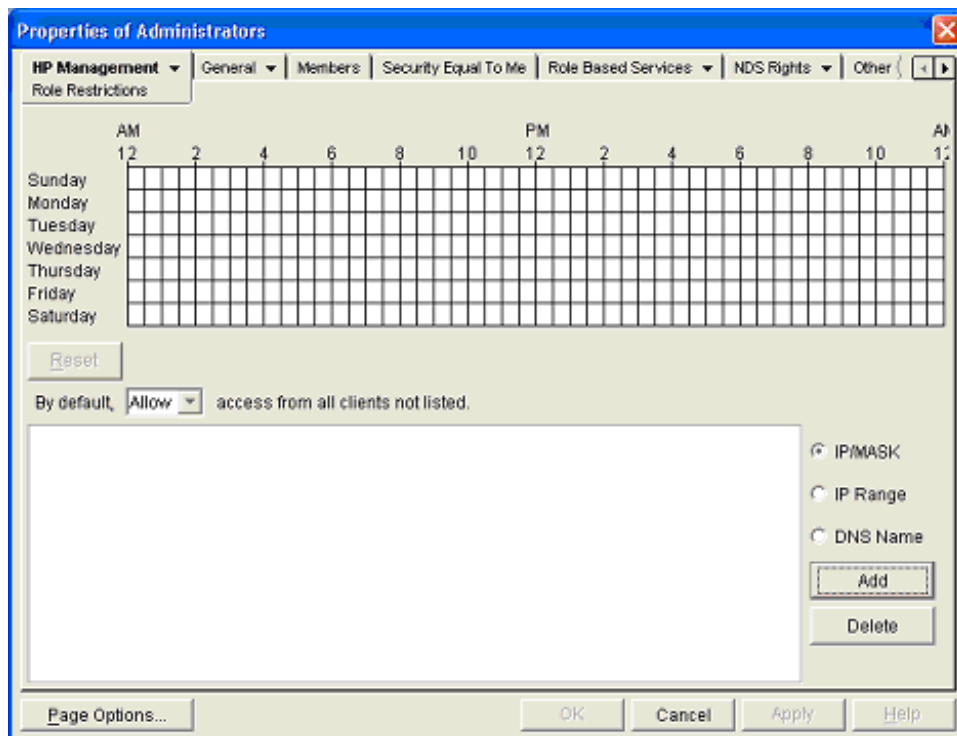


Role Restrictions

The **Role Restrictions** subtab allows you to set login restrictions for the role. These restrictions include:

- Time Restrictions
- IP Network Address Restrictions
 - IP/Mask

- IP Range
- DNS Name



Time Restrictions

You can manage the hours available for logon by members of the role by using the time grid displayed in the **Role Restrictions** subtab. You can select the times available for logon for each day of the week in half-hour increments. You can change a single square by clicking it, or a section of squares by clicking and holding the mouse button, dragging the cursor across the squares to be changed, and releasing the mouse button. The default setting is to allow access at all times.

Enforced Client IP Address or DNS Name Access

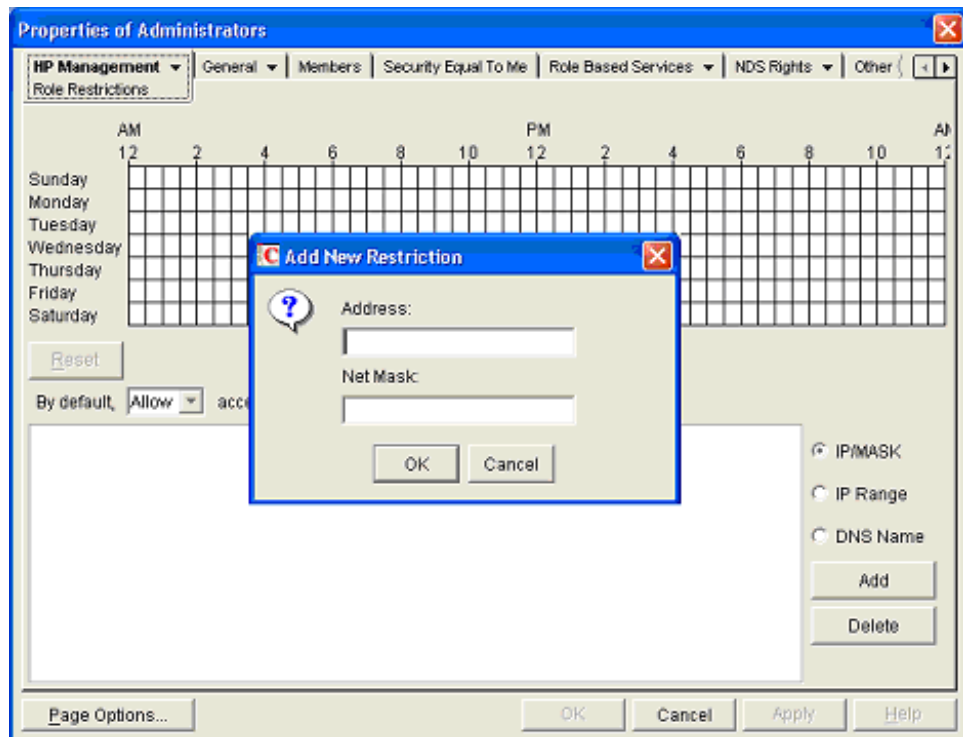
Access can be granted or denied to an IP address, IP address range, or DNS names.

1. In the **By Default** drop-down menu, select whether to **Allow** or **Deny** access from all addresses except the specified IP addresses, IP address ranges, and DNS names.
2. Select the addresses to be added, select the type of restriction, and click **Add**.
3. In the **Add New Restriction** popup window, enter the information and click **OK**. The **Add New Restriction** popup for the IP/Mask option is shown.

NOTE: The **DNS Name** option allows you to restrict access based on a single DNS name or a subdomain, entered in the form of host.company.com or *.domain.company.com.

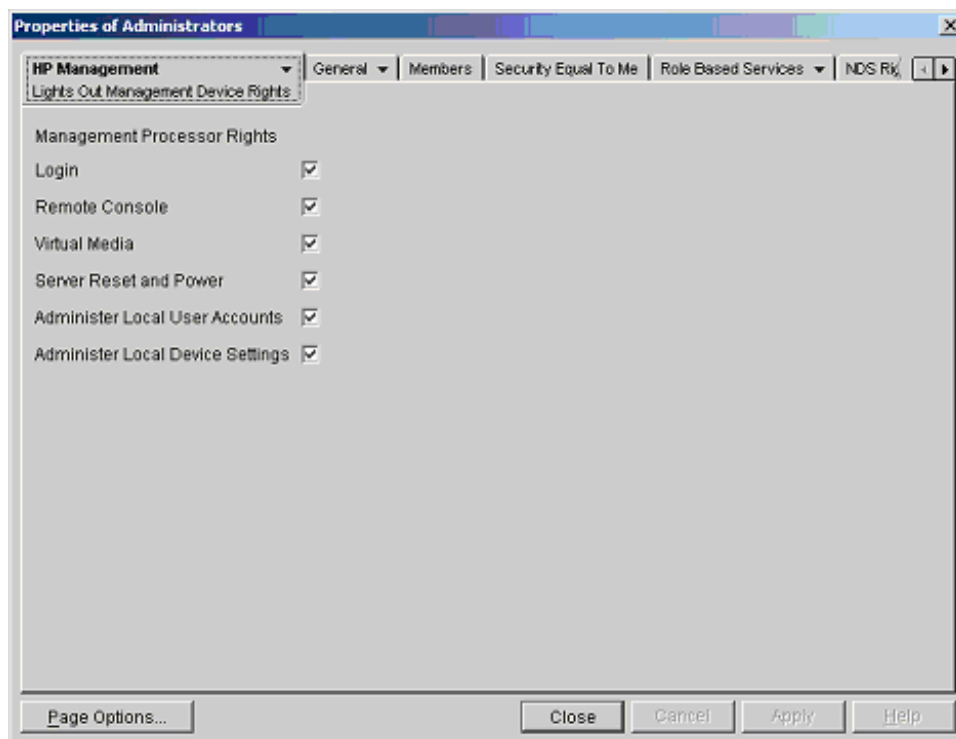
4. Click **Apply** to save the changes.

To remove any of the entries, highlight the entry in the display field and click **Delete**.



Lights-Out Management

After a role is created, rights for the role can be selected. Users and group objects can now be made members of the role, giving the users or group of users the rights granted by the role. Rights are managed on the **Lights Out Management Device Rights** subtab of the **HP Management** tab.



The available rights are:

- **Login**—This option controls whether users can log in to the associated devices.

Login access can be used to create a user who is a service provider and who receives alerts from the board but does not have login access to the RILOE II.

- **Remote Console**—This option allows the user access to the Remote Console.

- **Virtual Media**—This option allows the user access to the RILOE II Virtual Floppy and Virtual Media functionality.
- **Server Reset and Power**—This option allows the user to remotely reset the server or power it down.
- **Administer Local User Accounts**—This option allows the user to administer accounts. The user can modify their account settings, modify other user account settings, add users, and delete users.
- **Administer Local Device Settings**—This option allows the user to configure the RILOE II board settings. These settings include the options available on the **Global Settings**, **Network Settings**, **SNMP Settings**, and **Directory Settings** screens of the RILOE II Web browser.

Configuring Directory Settings

The screenshot shows the Remote Insight web interface for configuring Directory Settings. The top navigation bar includes 'System Status', 'Remote Console', 'Virtual Devices', and 'Administration'. The left sidebar lists various settings categories, with 'Directory Settings' highlighted. The main content area is titled 'Directory Settings' and contains the following configuration options:

- Directory Authentication:** A radio button selection between 'Enabled' (selected) and 'Disabled'.
- Directory Server Address:** A text input field containing 'mariana.wins.hp.com'.
- Directory Server LDAP Port:** A text input field containing '636'.
- LOM Object Distinguished Name:** A text input field containing 'CN=RILOP4,CN=USERS,DC=RILOTEST2'.
- LOM Object Password:** A text input field containing masked characters '*****'.
- Directory User Context 1:** A text input field containing 'CN=USERS,DC=RILOTEST2,DC=HP'.
- Directory User Context 2:** A text input field containing '@RILOTEST2.HP'.
- Directory User Context 3:** An empty text input field.

At the bottom of the form are two buttons: 'Test Settings' and 'Apply Settings'.

The **Directory Settings** screen contains the following settings options:

- **Directory Authentication**—Designates whether a directory server is used to authenticate a user login. By default, this setting is **Disabled**.
- **Local User Accounts**—Allows a user to log in using a local user account instead of a directory account. By default, this setting is **Enabled**.
- **Directory Server Address**—Designates the IP address or DNS Name of the directory server or the name of the domain. This setting is required if you are using directory services for user authentication. HP recommends using a DNS name or multi-host DNS name. If an IP address is used, the directory will not be available if that server is down.
- **Directory Server LDAP Port**—Designates the port used for LDAP communications. The default setting is the secure LDAP port 636. If you change the LDAP port, it must be an LDAP over SSL port.
- **LOM Object Distinguished Name**—Specifies the full distinguished name of the Lights-Out Device object in the directory service. For example, CN=RILOE2OBJECT,CN=Users,DC=HP,DC=com. Distinguished names are limited to 256 characters.
- **LOM Object Password**—Specifies the password the Lights-Out device object will use to login to its corresponding object in the directory. The password is used by the RILOE II to communicate with the directory. It is not necessary if the directory will only be used for user authentication and access. Passwords are limited to 40 characters.

NOTE: At this time, the LOM Object Password field is not used. This field is to provide forward compatibility with future firmware releases.
- **Directory User Context**—Specifies search contexts when authenticating a user. These settings point to areas in the directory service where users are located so the user does not have to enter the complete tree structure when logging in. For example, CN=Users,DC=HP,DC=com. Directory User Contexts are limited to 128 characters each.

Any changes to the screen are completed by clicking **Apply Settings**. **Test Settings** allows you to test the communication between the directory server and the RILOE II board.

User Login to RILOE II

The RILOE II login page **Login Name** field accepts all of the following:

- Directory users
- LDAP Fully Distinguished Names

Example: CN=John Smith,CN=Users,DC=HP,DC=COM, or @HP.com

NOTE: The short form of the login name by itself does not tell the directory which domain you are trying to access. You must provide the domain name or use the LDAP distinguished name of your account.

- DOMAIN\user name form (Active Directory Only)

Example: HP\jsmith

- username@domain form (Active Directory Only)

Example: jsmith@hp.com

NOTE: Directory users specified using the @ searchable form may be located in one of three searchable contexts, which are configured within **Directory Settings**.

- User name form

Example: John Smith

NOTE: Directory users specified using the user name form may be located in one of three searchable contexts, which are configured within **Directory Settings**.

- Local users—Login-ID

NOTE: On the RILOE II login page, the maximum length of the **Login Name** is 40 characters for local users. For Directory Services users, the maximum length of the **Login Name** is 256 characters.

The local user database is retained. The customer can decide not to use directories, to use a combination of directories and local accounts, or use directories exclusively for authentication.

Troubleshooting the RILOE II

In This Section

Login Name and Password Problems	133
Video Problems	134
Network Connection Problems.....	134
Alert and Trap Problems.....	136
NetWare Initialization Errors	137
Miscellaneous Problems	138
Resetting the RILOE II to Factory Default Settings.....	140
Interpreting LED Indicators.....	141
Accessing System Partition Utilities	141
Event Log Entries	142
Directory Services Errors	146

This section discusses common issues that may arise when working with the RILOE II and offers possible causes and solutions.

Login Name and Password Problems

If you have connected to the board but it does not accept your login name and password, you must verify that your login information is configured correctly. Connect to the RILOE II using your browser, log in with a user name that has administrative access, and reenter the login name and password that are not being accepted.

NOTE: The login name and password are case sensitive. The RBSU F8 can also be used to correct login problems. After five login attempts, the board times out and it may take a minute for it to reset.

Video Problems

The RILOE II contains an integrated VGA controller. When the RILOE II is first installed, the server detects this controller and attempts to use it by switching video from the embedded video controller of the server. To avoid this problem, be sure that your monitor is connected to the RILOE II. Refer to "Monitor Cable Connection" ("Monitor Cable Connection" on page 25) for more information.

IMPORTANT: Some servers contain PCI-based VGA controllers. These controllers must be removed to configure the VGA controller on the Remote Insight Lights-Out Edition II board.

Be sure the Remote Insight Lights-Out Edition II is installed in a supported PCI slot. Refer to the "Server PCI Slot and Cable Matrix" (on page 16) to determine the correct slot for the server. If the server is not listed, refer to the HP website (<http://www.hp.com/servers/lights-out>) for an updated table.

Some servers require disabling of the embedded video before installing the RILOE II board. You can disable the embedded video controller by powering off the server and setting the system configuration maintenance switch 1 to ON.

The following servers require that the embedded video be disabled:

- ProLiant ML330 server
- ProLiant ML350 server

Network Connection Problems

The following sections provide troubleshooting information for common network connection problems.

Inability to Connect to the Board Through the NIC

If you cannot connect to RILOE II through the NIC, try any or all of the following troubleshooting methods:

- Confirm that the green LED indicator (link status) on the board connector bracket is on. This condition indicates a good connection between the PCI NIC and the network hub.

- Look for intermittent flashes of the green LED indicator, which indicate normal network traffic.
- Run the RBSU F8 to confirm that the NIC is enabled and to verify the assigned IP address and subnet mask.
- From another workstation on the same network, ping the RILOE II IP address.
- Attempt to connect with browser software by typing the RILOE II IP address. You can see the Remote Insight home page from this address.
- Reset the RILOE II.

To reset the RILOE II in a Windows NT® or Windows® 2000 server:

- a. In **Control Panel**, select **Services** and stop the Insight Agents.
- b. In **Control Panel**, select **Insight Agents**.
- c. Select **Remote Insight** and click **Reset**.
- d. Restart the Insight Agents.

Inability to Obtain SNMP Information from Insight Manager 7 when Connected to the Remote Insight Network Interface

The agents running on the managed server supply the SNMP information provided to Insight Manager 7 ("Group Administration Using Insight Manager 7" on page 86). For those agents to pass information through the RILOE II, the Remote Insight device drivers must be installed. Refer to "Installing RILOE II Device Drivers" ("Installing RILOE II Device Drivers" on page 41) for installation instructions.

If you have installed the drivers and agents for the RILOE II, verify that the RILOE II and the management PC are on the same subnet. You can verify this quickly by pinging the Remote Insight board from the management PC. See your network administrator for proper routes to access the network interface of the RILOE II.

Web Browser Not Connecting to the RILOE II IP Address

If the Web browser software is configured to use a proxy server, it will not connect to the RILOE II IP address. To resolve this issue, configure the browser not to use the proxy server for the IP address of the RILOE II. For example, in Internet Explorer, select **View, Options**, click **Connection Settings**, and then enter the IP address in the **Exceptions** field.

NOTE: If the Remote Insight Lights-Out Edition II is using 128-bit encryption, be sure that the client browser supports 128-bit encryption.

Alert and Trap Problems

The following sections provide troubleshooting information for common alert and trap errors.

Inability to Receive Insight Manager 7 Alarms (SNMP Traps) from the RILOE II

Be sure that the correct Insight Manager 7 ("Group Administration Using Insight Manager 7" on page 86) alert types are enabled.

1. Log on to the RILOE II with administrative access.
2. Click **Global Settings** on the **Administrator** tab.
3. Enter the SNMP IP addresses in the **SNMP Trap Destination** fields.

Server Power Status Reported Incorrectly and Send Test Trap Not Responding

The power status of the server may be reported as off when the server is actually on. This problem may occur if the server is powered off and then powered back on within four minutes. The following configuration will cause this error to occur:

- The supplied DNS server IP address on the Network Settings page is invalid or unavailable.

- An SNMP trap destination is set as a DNS name is invalid or unavailable.
- Remote Insight Board SNMP Traps are enabled with no destination address defined.

If the preceding configuration is set, Send Test Trap also will not respond for a period of approximately four minutes.

To correct this problem, be sure the DNS server specified in Network Settings is correct. If a DNS server is not on the network, the setting should be 0.0.0.0. Alternately, use IP addresses instead of DNS names when configuring SNMP trap destinations.

NetWare Initialization Errors

When a NetWare server is started, each driver loaded in the AUTOEXEC.NCF is executed. If a problem is found during execution, an initialization error is displayed. The NetWare Error Messages Table ("NetWare Error Message Table" on page 138) shows potential initialization error messages and suggested courses of action.

NetWare Error Message Table

Error Message	Action
Adapter IRQ or memory settings not set	Run the System Configuration Utility.
Unable to allocate resource tag	Apply any relevant NetWare patches. Contact your service provider.
Unable to register NetWare hardware options	Apply any relevant NetWare patches. Run Diagnostics on the RILOE II.
Remote Insight interface type unknown	Upgrade CPQRI.NLM to a newer version.
Unable to initialize the RILOE II	Run Diagnostics on the RILOE II.
Unable to allocate memory	Check available NetWare resources.
RILOE II not found	The RILOE II board is not installed in the server. The board must be installed before loading the device driver.

Miscellaneous Problems

The following sections provide troubleshooting information for miscellaneous errors.

Incorrect Time or Date of Entries in the Event Log

The time and date are updated by Insight Management agents on supported network operating systems. The RILOE II time and date are updated at boot time and the agents automatically update the time and date periodically.

Inability to Reboot the Server

If you have added the RILOE II board to a previously configured server, run the RBSU F8 to properly configure the RILOE II board with information about that server. Refer to Configuring the ("Configuring the RILOE II" on page 39)RILOE II for the steps to configure the RILOE II using the RBSU F8.

Be sure the Remote Insight Lights-Out Edition II is installed in a supported PCI slot. Refer to the "Server PCI Slot and Cable Matrix" (on page 16) to determine the correct slot for the server. If the server is not listed, refer to the HP website (<http://www.hp.com/servers/lights-out>) for an updated table.

NOTE: If you are using the Virtual Power Button feature, verify that the Remote Insight internal cable or the Virtual Power Button cable has been installed correctly.

Inability to Upgrade the RILOE II Firmware

If you attempt to upgrade the firmware of the RILOE II, and the board does not respond or does not accept the firmware upgrade, you must force the ROM upgrade procedure by changing the default switch settings of SW3 ("Switch Settings (SW3) to Force ROM Upgrade" on page 140). Upgrade the firmware of the RILOE II by downloading the RILOE II Smart Component available on the HP website (<http://www.hp.com>).

1. Download and extract the Smart Component.
2. Use the `makedisk.bat` file to create a bootable firmware diskette.
3. Insert the bootable diskette into the host server.
4. Power on the server.
5. Follow the onscreen instructions to upgrade the RILOE II firmware.

When the firmware upgrade is complete, return the switches to the factory default position ("Switch Settings (SW3): Factory Defaults" on page 141).

Switch Settings (SW3) to Force ROM Upgrade

Switch	Default	Force ROM Upgrade
1	OFF	OFF
2	OFF	OFF
3	OFF	ON
4	OFF	OFF

Resetting the RILOE II to Factory Default Settings

To reset the RILOE II to the factory default settings, you can use RBSU F8 or you the jumper settings.

To restore the factory default settings using RBSU F8:

1. Restart or power up the server.
2. Press the **F8** key to enter RBSU F8 when prompted.
3. Select **File**, then **Set Defaults**.
4. Press the **Enter** key to reset the RILOE II to the default settings.

To restore the factory default settings using the switch settings, change the SW3 settings.

1. Power down and remove power from the server.
2. Remove the RILOE II board and change the switch settings to the factory default settings ("Switch Settings (SW3): Factory Defaults" on page 141), and then install the RILOE II back in the server.
3. Restore power and power up the server. Wait until the number 7 LED, as shown in "Interpreting LED Indicators" ("Interpreting LED Indicators" on page 141), is the only one flashing on the RILOE II.
4. Power down and remove power from the server, remove the board and return the switch settings to the default position, and then reinstall the board in the server.
5. Restore power and power up the server.

Switch Settings (SW3): Factory Defaults

Switch	Default	Factory Defaults Settings
1	OFF	OFF
2	OFF	OFF
3	OFF	ON
4	OFF	ON

Interpreting LED Indicators

The LED indicators are located on the front of the RILOE II board. The LED indicators have the following assignments.

FB	7	6	5	4	3	2	1	0
----	---	---	---	---	---	---	---	---

During the initial boot of the RILOE II, the LED indicators flash randomly. After the board has booted, the 7 LED flashes every second and the other LED indicators (0 through 6) light up. The FB LED lights up after the system has booted to indicate a hardware failure.

If a hardware failure is detected, reset the RILOE II board. Refer to "Resetting the RILOE II to Factory Default Settings" ("Resetting the RILOE II to Factory Default Settings" on page 140) for more information on resetting the board. If you continue to have problems, you can contact HP Technical Support or visit the HP website (<http://www.hp.com>).

Accessing System Partition Utilities

When booting a ProLiant server configured with a RILOE II and **F10** is selected to access the System Partition Utilities, an error message may be displayed stating that the system is not configured. The error message is false. The server is properly configured.

After entering the date and time and pressing **Enter**, the server immediately reboots. The System Partition Utility options are never displayed. The problem recurs on subsequent reboots when **F10** is pressed.

NOTE: The problem does not occur when pressing **F8** to access RBSU.

To access the System Partition Utilities:

1. Remove the RILOE II and reboot the server.
2. Press **F10** to access the System Partition Utilities.

Event Log Entries

The following table lists Event Log displays and explanations to help you troubleshoot the RILOE II board. In the table, *USER*, *#*, and *IP address* are used to designate that a specific user, number, or IP address is displayed, as appropriate.

Event Log Display	Event Log Explanation
Server power failed	Is displayed when the server power fails.
Browser login: IP address	Displays the IP address for the browser that logged in.
Server power restored	Is displayed when the server power is restored.
Browser logout: IP address	Displays the IP address for the browser that logged out.
Server reset	Is displayed when the server is reset.
Failed Browser login - IP Address: IP address	Is displayed when a browser login fails.
Remote Insight Self-Test Error: #	Is displayed when the Remote Insight board has failed an internal test. The probable cause is that a critical component has failed. Further use of this board is not recommended.
Remote Insight Board reset	Is displayed when the board is reset.
On-board clock set; was #:#:#:#:#	Is displayed when the onboard clock is set.
Server logged critical error(s)	Is displayed when the server logs critical errors.
Event log cleared by: USER	Is displayed when a user clears the event log.
Keyboard cable disconnected	Is displayed when the keyboard cable is disconnected.
Keyboard cable connected	Is displayed when the keyboard cable is connected.
Remote Insight Board reset to factory defaults	Is displayed when the board is reset to the default settings.
Remote Insight Board reset	Is displayed when the board is reset.
Remote Insight ROM upgrade to #	Is displayed when the ROM has been upgraded.
Remote Insight Board reset for ROMPAQ upgrade	Is displayed when the board is reset for the ROM upgrade.

Event Log Display	Event Log Explanation
Remote Insight Board reset by user diagnostics	Is displayed when the board is reset by a user diagnostics session.
Power restored to Remote Insight Board	Is displayed when the power is restored to the board.
Remote Insight Board reset by watchdog	Is displayed when a noncritical error has occurred in the Remote Insight board, and the board has automatically reset itself. If this action persists, call customer support.
Remote Insight Board reset by host	Is displayed when the board is reset by the server.
Recoverable Remote Insight Error, code #	Is displayed when a noncritical error has occurred in the Remote Insight board, and the board has automatically reset itself. If this action persists, call customer support.
SNMP trap delivery failure: IP address	Is displayed when the SNMP trap does not connect to the specified IP address.
Test SNMP trap alert failed for: IP address	Is displayed when the SNMP trap does not connect to the specified IP address.
Power outage SNMP trap alert failed for: IP address	Is displayed when the SNMP trap does not connect to the specified IP address.
Server reset SNMP trap alert failed for: IP address	Is displayed when the SNMP trap does not connect to the specified IP address.
Illegal login SNMP trap alert failed for: IP address	Is displayed when the SNMP trap does not connect to the specified IP address.
Keyboard cable SNMP trap alert failed for: IP address	Is displayed when the SNMP trap does not connect to the specified IP address.
Diagnostic error SNMP trap alert failed for: IP address	Is displayed when the SNMP trap does not connect to the specified IP address.

Event Log Display	Event Log Explanation
Host generated SNMP trap alert failed for: IP address	Is displayed when the SNMP trap does not connect to the specified IP address.
Remote Insight network link up	Is displayed when the network is connected to the board.
Remote Insight network link down	Is displayed when the network is not connected to the board.
Mouse cable SNMP trap alert failed for: IP address	Is displayed when the SNMP trap does not connect to the specified IP address.
Mouse cable connected	Is displayed when the mouse cable is connected.
Mouse cable disconnected	Is displayed when the mouse cable is disconnected.
External power adapter connected	Is displayed when the external power adapter is connected.
External power adapter disconnected	Is displayed when the external power adapter is disconnected.
RIB Firmware upgrade started from browser by: USER	Is displayed when a user starts a firmware upgrade.
Remote Floppy Inserted by: USER	Is displayed when a user inserts the remote floppy.
Host server reset by: USER	Is displayed when a user resets the host server.
Host server powered OFF by: USER	Is displayed when a user powers off a host server.
Host server powered ON by: USER	Is displayed when a user powers on a host server.
Virtual Floppy Inserted by: USER	Is displayed when a user inserts a Virtual Floppy.
Remote Console login: USER	Is displayed when a user logs on to a Remote Console.
Remote Console Closed	Is displayed when a Remote Console is closed.

Event Log Display	Event Log Explanation
Failed Console login - IP Address: IP address	Displays a failed console login and IP address.
Handheld login: IP address	Is displayed when a handheld logs in.
Handheld logout: IP address	Is displayed when a handheld logs out.
Failed Handheld login - IP Address: IP address	Displays a failed handheld login and IP address.
Added User: User	Is displayed when a user adds a user.
User Deleted by: USER	Is displayed when a user deletes a user.
Modified User: USER	Is displayed when a user modifies a user.
XML login: USER	Is displayed when a user logs on.
Failed XML login: USER	Is displayed when a user's login fails.
XML: Modified USER	Is displayed when a user modifies a user.
RIB Firmware upgrade started from XML by: USER	Is displayed when a firmware upgrade is started.
XML: Added User: USER	Is displayed when a user adds a user.
XML: User Deleted: USER	Is displayed when a user deletes a user.
User has been deleted	Is displayed when a user has been deleted.
System PCI config error, Code	Is displayed when there is a PCI configuration error.
Subsystem Failure, Code	Displays subsystem failures.

Directory Services Errors

The following are the most common Directory Services LDAP errors.

- Directory Server Connect Failed

- Invalid Credentials
- Invalid Directory server address or port
- Directory Server Timeout
- Unauthorized, couldn't find RIB object
- Unauthorized, no readable roles
- Unable to read restrictions on object
- Time Restriction Not Satisfied
- IP Restriction Not Satisfied
- Unauthorized

Directory Server Connect Failed

The RILOE II was not able to connect to the LDAP server. Be sure that the Directory Server Address on the RILOE II Directory Settings Screen is correct, and that the port number corresponds to the LDAP SSL port number used by that directory server, usually port 636. If the directory server address is a DNS name, be sure that the DNS server is properly configured on the RILOE II Network Setting Screen, and that the DNS name of the directory server resolves to the appropriate address using "nslookup" or a similar tool.

Many SSL problems are reported with this error; be sure your directory server is properly configured for LDAP SSL connections. Refer to the installation prerequisites for Active Directory ("Active Directory Installation Prerequisites" on page 99) or eDirectory ("eDirectory Installation Prerequisites" on page 116) for more information on testing LDAP SSL configurations.

Invalid Credentials

The directory server has denied the authentication request. If configured, check the searchable contexts to be sure the user exists in one of those contexts, or try specifying a fully distinguished name. Directory servers will deny the authentication request if the user account has been disabled, locked out, or is otherwise prevented from authenticating due to network address or time restrictions placed on the account.

This error is common on eDirectory when periods are used to separate the name components, or the components are partially specified. LDAP distinguished name components are separated by commas, not periods, and must be preceded by `cn=`, or appropriate naming attribute name.

NOTE: The short form of the login name by itself does not tell the directory which domain you are trying to access. You must provide the domain name or use the LDAP distinguished name of your account.

Invalid Directory Server Address or Port

The specified Directory Server address was empty, or the port number was set to 0. Specify the correct server address or port.

Directory Server Timeout

The server did not acknowledge the bind request within a reasonable amount of time, normally 20 seconds. The server may be under heavy load or otherwise unwilling to process the request. Try again later.

This error can also occur if the Directory Server address and port correspond to a service other than LDAP SSL.

Unauthorized, Couldn't Find RILOE II Object

An error occurred while trying to read the RILOE II object. Be sure that the distinguished name specified in the Directory Settings screen matches the location of the object within the directory. The distinguished name must be a fully distinguished LDAP name.

Unauthorized, No Readable Roles

An error occurred while reading a ROLE object. The object does not exist, or the current user is not authorized to read it. This error is common for users that are not members of all the roles that are managing the RILOE II.

Unable to Read Restrictions on Object

A ROLE object had no readable value for the Time Restriction attribute. The role was subsequently invalidated. This error is common for users that are not members of all the roles that are managing the Remote Insight Lights-Out Edition II.

Time Restriction Not Satisfied

No roles that manage the RILOE II were granted sufficient rights to authenticate, and at least one of the roles was invalidated because the Time Restriction was not set or specifically disallowed the current time. If the RILOE II host server has never booted or has an incorrect clock, then the RILOE II clock will also be incorrect. Time Restrictions are always applied in RILOE II local time. Be sure that the RILOE II is in the appropriate time zone.

IP Restriction Not Satisfied

A ROLE was invalidated because the IP restrictions demanded it. If a client has been excluded or included on a role on the basis of a DNS name, be sure that the DNS server used by the RILOE II returns the correct hostname.

Unauthorized

None of the roles found were granted the LOGIN right. Correct the roles associated with the RILOE II.

Remote Insight Command Language

In This Section

Overview of the Remote Insight Board Command Language.....	152
RIBCL General Guidelines	152
XML Header.....	152
Data Types.....	153
RIBCL	154
LOGIN.....	154
USER_INFO.....	155
ADD_USER	156
DELETE_USER.....	160
GET_USER	161
MOD_USER.....	162
GET_ALL_USERS	165
GET_ALL_USERS_INFO	167
RIB_INFO	168
RESET_RIB	169
GET_NETWORK_SETTINGS.....	169
MOD_NETWORK_SETTINGS	171
DIR_INFO	174
GET_DIR_CONFIG.....	175
MOD_DIR_CONFIG	176
GET_GLOBAL_SETTINGS	178
MOD_GLOBAL_SETTINGS	179
CLEAR_EVENTLOG.....	182
UPDATE_RIB_FIRMWARE	183
GET_FW_VERSION	184
INSERT_VIRTUAL_FLOPPY	185
EJECT_VIRTUAL_FLOPPY	186
COPY_VIRTUAL_FLOPPY	187
GET_VF_STATUS	188
SET_VF_STATUS.....	189
HOTKEY_CONFIG.....	190
SERVER_INFO	192
GET_HOST_POWER_STATUS.....	192
SET_HOST_POWER.....	193

GET_VPB_CABLE_STATUS	194
RESET_SERVER.....	195
GET_ALL_CABLES_STATUS	196

Overview of the Remote Insight Board Command Language

The Remote Insight Board Command Language enables you to write scripts to manage user accounts and to configure settings.

IMPORTANT: Comments should not interrupt a command. If they do, an error message will be generated.

RIBCL General Guidelines

In this section, all of the commands are grouped by functionality. All commands that manipulate user information are grouped together. Grouping commands allows the firmware to view the data to be manipulated as a block of information, similar to a text document, allowing for multithreaded access to the different kinds of information.

An opening command opens a database. The database remains open until the matching closing command is sent. All changes made within a single command block are applied simultaneously when the database is closed. Any errors within the block cause the enclosed changes to be discarded.

An example of an opening command and its matching closing command are as follows:

```
<USER_INFO>
</USER_INFO>
```

In all examples, the opening and closing commands are displayed.

XML Header

The XML header ensures the connection is an XML connection, not an HTTP connection. The XML header is built into the cpqlcfg utility and has the following format:

```
<?xml version="1.0"?>
```

Data Types

The three data types that are allowed in the parameter are:

- String
- Specific string
- Boolean string

String

A string is any text enclosed in quotes. It can include spaces, numbers, or any printable character. A string may start with either a double or single quote and it must end with the same type of quote. The string may contain a quote if it is different from the string delimiter quotes.

For example, if a string is started with a double quote, a single quote can be used within the string and the string must be closed with a double quote.

Specific String

A specific string is one that is required to contain certain characters. In general, you have a choice of words that are accepted as correct syntax and all other words produce an error.

Boolean String

A Boolean string is a specific string that specifies a "yes" or "no" condition. Acceptable Boolean strings are "yes," "y," "no," "n," "true," "t," "false," and "f." These strings are not case sensitive.

RIBCL

This command is used to start and end an RIBCL session. You can use it only once to start an RIBCL session, and it must be the first command to display in the script. The RIBCL tags are required to mark the beginning and the end of the RIBCL document.

Example:

```
<RIBCL VERSION="2.0">  
</RIBCL>
```

RIBCL Parameter

VERSION is a string that indicates the version of the RIBCL that the client application is expecting to use. The VERSION string is compared to the version of the RIBCL that is expected, and an error is returned if the string and the version do not match. The preferred value for the VERSION parameter is "2.0." The VERSION parameter is no longer checked for an exact match; however, this parameter can never be blank.

RIBCL Runtime Errors

The possible RIBCL error messages include:

Version must not be blank.

LOGIN

The LOGIN command provides the information that is used to authenticate the user whose permission level will be used when performing RIBCL actions. The specified user must have at least login privilege in order to be validated to execute any RIBCL commands. The user privilege is checked against the required privilege for a particular command, and an error is returned if the privilege level does not match.

Example:

```
<LOGIN USER_LOGIN="username" PASSWORD="password">
```

</LOGIN>

NOTE: Users without administrative privileges can change their password setting.

LOGIN Parameters

USER_LOGIN is the name that the user types to log in to the RILOE II. The USER_LOGIN parameter has a maximum length of 40 characters, can be an ASCII string containing any combination of printable characters, and is case sensitive. The USER_LOGIN parameter must never be blank.

PASSWORD is the password that will be associated with the user. This parameter has a minimum length of 8 characters, a maximum length of 40 characters, and is an ASCII string that may contain any combination of printable characters. The PASSWORD parameter cannot contain both single and double quote characters. This parameter is case sensitive and must never be blank.

LOGIN Runtime Errors

The possible runtime error messages include:

- User login name was not found.
- Password must not be blank.
- Logged-in user does not have required privilege for this command.

USER_INFO

The USER_INFO command may only display within a LOGIN command. When the command is parsed, it reads the local user information database into memory and prepares to edit it. Only commands that are USER_INFO type commands are valid inside the USER_INFO block. The USER_INFO command generates a response that indicates to the host application whether the user information was successfully read or not. If the user information is open for writing by another application, then this call will fail.

Example:

```
<USER_INFO MODE="write">
</USER_INFO>
```

USER_INFO Parameter

MODE is a specific string parameter with a maximum length of 10 characters that specifies what you intend to do with the user information. Valid arguments are "read" and "write."

If the parameter is open in write mode, then both reading and writing are enabled and other users are unable to open the user information. If it is open in read mode, then user data is not modifiable. The argument is not case sensitive. This parameter must never be blank.

USER_INFO Runtime Error

A possible runtime error message is: Mode parameter must not be blank.

ADD_USER

The ADD_USER command is used to add a local user. All of the attributes that pertain to the user are set using the following parameters. For this command to work, the user must not already exist. Use the MOD_USER command to change an existing user's information. The ADD_USER command must be displayed within a USER_INFO element, and USER_INFO must be in write mode. The user must have administrative privilege to add other users.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <USER_INFO MODE="write">
      <ADD_USER>
        USER_NAME  ="Admin User"
        USER_LOGIN ="username"
        PASSWORD   ="password"/>
        <ADMIN_PRIV value ="No"/>
        <CONFIG_RILO_PRIV value ="No"/>
```

```
<LOGIN_PRIV value = "Yes"/>
<REMOTE_CONS_PRIV value = "Yes"/>
<RESET_SERVER_PRIV value = "Yes"/>
<VIRTUAL_MEDIA_PRIV value = "Yes"/>
<CLIENT_RANGE value = ""/>
</ADD_USER>
</USER_INFO>
</LOGIN>
</RIBCL>
```

ADD_USER Parameters

USER_NAME is the actual name of the user. The USER_NAME parameter has a maximum length of 48 characters and can be any ASCII string containing printable characters, including white spaces. This string is used for display only and must never be blank.

USER_LOGIN is the name that the user types to log in to the RILOE II. The USER_LOGIN parameter has a maximum length of 40 characters, can be an ASCII string containing any combination of printable characters, and is case sensitive. The USER_LOGIN parameter must never be blank.

PASSWORD is the password that will be associated with the user. This parameter has a minimum length of 8 characters, a maximum length of 40 characters, and is an ASCII string that may contain any combination of printable characters. The PASSWORD parameter cannot contain both single and double quote characters. This parameter is case sensitive and must never be blank.

The following parameters control a user's rights. These parameters are optional and may have a "Yes" or "No" value, which grants or denies the right. If the parameter is not entered, the value is assumed to be "No."

ADMIN_PRIV is a Boolean parameter that allows the user to administer user accounts. The user can modify their account settings, modify other user account settings, add users, and delete users. Leaving out this parameter prevents the user from adding, deleting, or configuring accounts.

CONFIG_RILO_PRIV is a Boolean parameter that gives the user permission to configure the board settings. The settings include network, global, Insight Manager, and SNMP settings. Leaving out the parameter denies the user the ability to configure board settings.

LOGIN_PRIV is a Boolean parameter that allows the user to log in to the RILOE II and use resources such as Web pages. Marking this parameter with a "No" value or leaving out this parameter effectively disables the account without deleting it.

REMOTE_CONS_PRIV is a Boolean parameter that gives permission for the user to access the Remote Console functionality. This parameter is optional, and the Boolean string must be set to "Yes" if the user should have Remote Console privileges. If this parameter is used, the Boolean string value must never be left blank. Leaving out this privilege will deny the user access to any Remote Console functionality.

RESET_SERVER_PRIV is a Boolean parameter that gives the user permission to remotely reset the server or power it down. This parameter is optional, and the Boolean string must be set to "Yes" if the user is allowed to modify the server power. If this parameter is used, the Boolean string value must never be left blank. Leaving out this parameter denies the user server reset privileges.

VIRTUAL_MEDIA_PRIV is a Boolean parameter that gives the user permission to access the virtual floppy functionality. This parameter is optional, and the Boolean string must be set to "Yes" if the user should have virtual floppy privileges. If this parameter is used, the Boolean string value must never be left blank. Leaving out this parameter denies the user virtual floppy privileges.

IMPORTANT: The following parameters limit the address from which the user may log in. If the user attempts to log in from other addresses, the request will be refused as though the user has typed an incorrect password. Exactly one of the following parameters must be present for a restriction to apply. To indicate that there is no limit to the locations from which the user can log in, do not enter one of these parameters. If the parameter is not blank, then the client addresses are limited as indicated.

CLIENT_IP specifies a single IP address that the user may use to connect to the RILOE II. This parameter must be a complete numerical IP address in the 0.0.0.0 format.

CLIENT_RANGE specifies a range of addresses that the user is allowed to use to access the RILOE II in the 0.0.0.0 format. Two addresses are specified with a dash (—) between them. Both addresses must be valid and complete TCP/IP numerical addresses. Any address that falls inside the range numerically will be accepted. This data parameter is mutually exclusive to the CLIENT_IP and the DNS_NAME parameters.

DNS_NAME specifies a DNS name with which the user logs in to the RILOE II and has a maximum length of 50 characters. This parameter is mutually exclusive to the CLIENT_IP and the CLIENT_RANGE parameters.

ADD_USER Runtime Errors

The possible ADD_USER error messages include:

- Login name is too long. Maximum length is 48 characters.
- Password is too short. Minimum length is 8 characters.
- Password is too long. Maximum length is 40 characters.
- User table is full. No room for new user.
- Cannot add user. The user name already exists.
- User information is open for read-only access. Write access is required for this operation.
- User name cannot be blank.
- User login ID cannot be blank.
- Password must not be blank.
- Boolean value not specified.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

DELETE_USER

The DELETE_USER command is used to remove an existing local user's information. Before this command is used, the USER_INFO command must have been issued with the mode set to "write." The user must have administrative privilege to delete other user accounts.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname"
    PASSWORD="password">
    <USER_INFO MODE="write">
      <DELETE_USER USER_LOGIN="username"/>
    </USER_INFO>
  </LOGIN>
</RIBCL>
```

DELETE_USER Parameter

USER_LOGIN is the login name of the user that you want to delete. The USER_LOGIN parameter has a maximum length of 40 characters, can be an ASCII string containing any combination of printable characters, and is case sensitive. The USER_LOGIN parameter must never be blank.

DELETE_USER Runtime Errors

The possible DELETE_USER errors include:

- User information is open for read-only access. Write access is required for this operation.
- Cannot delete user information for currently logged in user.
- User login name was not found.
- User login name must not be blank.
- User does not have correct privilege for action.
- Logged in user does not have required privileges for this command.

GET_USER

The GET_USER command returns the local user's information, excluding the password. The user must have login privilege to execute this command. If the user does not have administrative privileges, only the logged user's information can be retrieved.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <USER_INFO MODE="read">
      <GET_USER USER_LOGIN="username"/>
    </USER_INFO>
  </LOGIN>
</RIBCL>
```

GET_USER Parameter

USER_LOGIN is the name that the user types to log in to the RILOE II. The USER_LOGIN parameter has a maximum length of 40 characters, can be an ASCII string containing any combination of printable characters, and is case sensitive. The USER_LOGIN parameter must never be blank.

GET_USER Runtime Errors

The possible GET_USER error messages include:

- User login ID cannot be blank.
- User login name was not found.
- Logged-in user does not have required privilege for this command.

GET_USER Return Messages

A possible GET_USER return message includes:

```
<RESPONSE
  STATUS="0x0000"
  MSG="No Errors"
```

```
/>  
  <GET_USER  
    USER_NAME="Admin User"  
    USER_LOGIN= "username"  
    ADMIN_PRIV="N"  
    CONFIG_RILO_PRIV="Y"  
    LOGIN_PRIV="Y"  
    REMOTE_CONS_PRIV="Y"  
    RESET_SERVER_PRIV="N"  
    VIRTUAL_MEDIA_PRIV="N"  
    CLIENT_IP=" "  
/>
```

MOD_USER

The MOD_USER command is used to modify an existing local user's information. You are not required to enter any of the fields except for the first one, which specifies which user to modify. If any parameter does not need to be modified, you should omit it. MOD_USER must be displayed within a USER_INFO parameter, and USER_INFO must be in write mode. The user login name used to gain access cannot be modified.

To modify user names, user passwords, or user rights, the user must be logged in with the administrative privilege. A user without administrative privilege can only modify their account password.

Example:

```
<RIBCL VERSION="2.0">  
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">  
    <USER_INFO MODE="write">  
      <MOD_USER USER_LOGIN="loginname">  
        <USER_NAME value="username"/>  
        <PASSWORD value="password"/>  
        <ADMIN_PRIV value="No"/>  
        <LOGIN_PRIV value="Yes"/>  
        <REMOTE_CONS_PRIV value="Yes"/>  
        <RESET_SERVER_PRIV value="No"/>  
        <CONFIG_RILO_PRIV value="Yes"/>  
        <VIRTUAL_MEDIA_PRIV value="No"/>  
        <CLIENT_IP value="255.255.255.255"/>  
      </MOD_USER>  
    </USER_INFO>  
  </LOGIN>  
</RIBCL>
```

```
</USER_INFO>  
</LOGIN>  
</RIBCL>
```

MOD_USER Parameters

USER_LOGIN is the name that the user types to log in to the RILOE II. The USER_LOGIN parameter has a maximum length of 40 characters, can be an ASCII string containing any combination of printable characters, and is case sensitive. The USER_LOGIN parameter must never be blank.

NOTE: If the following parameters are not specified, then the parameter value for the specified user is not changed.

USER_NAME is the actual name of the user. The USER_NAME parameter has a maximum length of 48 characters and can be any ASCII string containing printable characters, including white spaces. This string is used for display only and must never be blank.

PASSWORD is the password that will be associated with the user. This parameter has a minimum length of 8 characters, a maximum length of 40 characters, and is an ASCII string that may contain any combination of printable characters. The PASSWORD parameter cannot contain both single and double quote characters. This parameter is case sensitive and must never be blank.

ADMIN_PRIV is a Boolean parameter that allows the user to administer user accounts. The user can modify their account settings, modify other user account settings, add users, and delete users. Leaving out this parameter prevents the user from adding, deleting, or configuring accounts.

LOGIN_PRIV is a Boolean parameter that allows the user to log in to the RILOE II and use resources such as Web pages. Marking this parameter with a "No" value or leaving out this parameter effectively disables the account without deleting it.

REMOTE_CONS_PRIV is a Boolean parameter that gives permission for the user to access the Remote Console functionality. This parameter is optional, and the Boolean string must be set to "Yes" if the user should have Remote Console privileges. If this parameter is used, the Boolean string value must never be left blank. Leaving out this privilege will deny the user access to any Remote Console functionality.

RESET_SERVER_PRIV is a Boolean parameter that gives the user permission to remotely reset the server or power it down. This parameter is optional, and the Boolean string must be set to "Yes" if the user is allowed to modify the server power. If this parameter is used, the Boolean string value must never be left blank. Leaving out this parameter denies the user server reset privileges.

CONFIG_RILO_PRIV is a Boolean parameter that gives the user permission to configure the board settings. The settings include network, global, Insight Manager, and SNMP settings. Leaving out the parameter denies the user the ability to configure board settings.

VIRTUAL_MEDIA_PRIV is a Boolean parameter that gives the user permission to access the virtual floppy functionality. This parameter is optional, and the Boolean string must be set to "Yes" if the user should have virtual floppy privileges. If this parameter is used, the Boolean string value must never be left blank. Leaving out this parameter denies the user virtual floppy privileges.

IMPORTANT: The following parameters limit the address from which the user may log in. If the user attempts to log in from other addresses, the request will be refused as though the user has typed an incorrect password. Exactly one of the following parameters must be present for a restriction to apply. To indicate that there is no limit to the locations from which the user can log in, do not enter one of these parameters. If the parameter is not blank, then the client addresses are limited as indicated.

CLIENT_IP specifies a single IP address that the user may use to connect to the RILOE II. This parameter must be a complete numerical IP address in the 0.0.0.0 format.

CLIENT_RANGE specifies a range of addresses that the user is allowed to use to access the RILOE II in the 0.0.0.0 format. Two addresses are specified with a dash (—) between them. Both addresses must be valid and complete TCP/IP numerical addresses. Any address that falls inside the range numerically will be accepted. This data parameter is mutually exclusive to the CLIENT_IP and the DNS_NAME parameters.

DNS_NAME specifies a DNS name with which the user logs in to the RILOE II and has a maximum length of 50 characters. This parameter is mutually exclusive to the CLIENT_IP and the CLIENT_RANGE parameters.

MOD_USER Runtime Errors

The possible MOD_USER error messages include:

- Login name is too long. Maximum length is 48 characters.
- Password is too short. Minimum length is 8 characters.
- Password is too long. Maximum length is 40 characters.
- User information is open for read-only access. Write access is required for this operation.
- User login ID cannot be blank.
- Cannot modify user information for currently logged user.
- This user is not logged in.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

GET_ALL_USERS

The GET_ALL_USERS command requests a list of all of the valid user names that are currently in the local user database. The user database must have been successfully opened with the USER_INFO command and must have been opened in read or write mode for this command to work. The user must have administrative privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <USER_INFO MODE="read">
      <GET_ALL_USERS />
    </USER_INFO>
  </LOGIN>
</RIBCL>
```

GET_ALL_USERS Parameters

USER_LOGIN is the name that the user types to log in to the RILOE II. The USER_LOGIN parameter has a maximum length of 40 characters, can be an ASCII string containing any combination of printable characters, and is case sensitive. The USER_LOGIN parameter must never be blank.

USER_INFO only displays within a LOGIN command. When the command is parsed, it reads the user information database into memory and prepares to edit it. Only commands that are USER_INFO type commands are valid inside the USER_INFO block. The USER_INFO command generates a response that indicates to the host application whether the user information was successfully read or not. If the user information is open for writing by another application, then this call will fail.

GET_ALL_USERS Runtime Error

Logged in user does not have required privileges for this command.

GET_ALL_USERS Return Messages

A possible GET_ALL_USERS return message is:

```
<RESPONSE
  STATUS="0x0000"
  MESSAGE='No Error'
/>
  USER_LOGIN="username"
  USER_LOGIN="user2"
  USER_LOGIN="user3"
  USER_LOGIN="user4"
  USER_LOGIN="user5"
  USER_LOGIN="user6"
  USER_LOGIN="user7"
  USER_LOGIN="user8"
  USER_LOGIN="user9"
  USER_LOGIN="user10"
  USER_LOGIN="user11"
  USER_LOGIN="user12"
/>
```

A possible unsuccessful request is:

```
<RESPONSE
  STATUS = "0x0001"
  MSG = "Error Message"/>
```

GET_ALL_USERS_INFO

The GET_ALL_USERS_INFO command requests the return of the current local user database. This command returns the detailed information on each user and not just the user login name. The user database must have been successfully opened with the USER_INFO command. The USER_INFO command can be opened in either read or write mode for GET_ALL_USERS_INFO command to work. GET_ALL_USERS_INFO requires the user to log in with administrative privilege.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <USER_INFO MODE="read">
      <GET_ALL_USER_INFO />
    </USER_INFO>
  </LOGIN>
</RIBCL>
```

GET_ALL_USERS_INFO Parameters

There are no parameters for this command.

GET_ALL_USERS_INFO Runtime Errors

A possible GET_ALL_USERS_INFO error is: Logged in user does not have required privilege for this command.

GET_ALL_USERS_INFO Return Messages

A possible GET_ALL_USERS_INFO return message is:

```
<RESPONSE
```

```
STATUS="0x0000"  
MSG="No Errors"  
/>  
<GET_USER  
USER_NAME="Admin"  
USER_LOGIN="Admin"  
ADMIN_PRIV="Y"  
CONFIG_RILO_PRIV="Y"  
LOGIN_PRIV="Y"  
REMOTE_CONS_PRIV="Y"  
RESET_SERVER_PRIV="Y"  
VIRTUAL_MEDIA_PRIV="Y"  
CLIENT_IP=" "  
/> .....
```

The same information will be repeated for all the users.

A possible unsuccessful request is:

```
<RESPONSE  
STATUS = "0x0001"  
MSG = "Error Message"/>
```

RIB_INFO

The RIB_INFO command tells the firmware that the configuration of the RILOE II is about to be changed.

Example:

```
<RIB_INFO MODE="write">  
..... RIB_INFO commands .....  
</RIB_INFO>
```

RIB_INFO Parameter

MODE is a specific string parameter with a maximum length of 10 characters that specifies what you intend to do with the user information. Valid arguments are "read" and "write."

Write mode enables both reading and writing, and other users will be unable to open the RILOE II information. Read mode prevents the user from changing any RILOE II data. Read mode is assumed if the mode attribute is left out.

RIB_INFO Runtime Errors

There are no RIB_INFO errors.

RESET_RIB

This command allows the user to reset the RILOE II. RESET_RIB must display inside a RIB_INFO block in write mode. The user must be logged in with configure RILOE II privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="Admin" PASSWORD="Password">
    <RIB_INFO MODE = "write">
      <RESET_RIB/>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

RESET_RIB Parameters

There are no parameters for this command.

RESET_RIB Runtime Errors

There are no errors for this command.

GET_NETWORK_SETTINGS

The GET_NETWORK_SETTINGS command allows the user to retrieve the network settings. GET_NETWORK_SETTINGS must display inside a RIB_INFO block. The user must have login privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
```

```
<LOGIN USER_LOGIN="adminname" PASSWORD="password">
<RIB_INFO MODE="read">
<GET_NETWORK_SETTINGS/>
</RIB_INFO>
</LOGIN>
</RIBCL>
```

GET_NETWORK_SETTINGS Parameters

There are no parameters for this command.

GET_NETWORK_SETTINGS Runtime Errors

There are no errors for this command.

GET_NETWORK_SETTINGS Return Messages

A possible GET_NETWORK_SETTINGS return message is:

```
<GET_NETWORK_SETTINGS
  SPEED_AUTOSELECT="YES"
  NIC_SPEED="100"
  FULL_DUPLEX="NO"
  DHCP_ENABLE="YES"
  DHCP_GATEWAY="YES"
  DHCP_DNS_SERVER="YES"
  DHCP_STATIC_ROUTE="YES"
  DHCP_WINS_SERVER="YES"
  REG_WINS_SERVER="YES"
  IP_ADDRESS="111.111.111.111"
  SUBNET_MASK="255.255.255.0"
  GATEWAY_IP_ADDRESS="111.111.111.1"
  DNS_NAME="test"
  DOMAIN_NAME="test.com"
  PRIM_DNS_SERVER="111.111.111.242"
  SEC_DNS_SERVER="111.111.111.242"
  TER_DNS_SERVER="111.111.111.242"
  PRIM_WINS_SERVER="111.111.111.246"
  SEC_WINS_SERVER="111.111.111.247"
  STATIC_ROUTE_1 DEST="0.0.0.0" GATEWAY="0.0.0.0"
  STATIC_ROUTE_2 DEST="0.0.0.0" GATEWAY="0.0.0.0"
```

```

        STATIC_ROUTE_3 DEST="0.0.0.0" GATEWAY="0.0.0.0"
        WEB_AGENT_IP_ADDRESS=" "
    />

```

A possible unsuccessful request is:

```

<RESPONSE
    STATUS = "0x0001"
    MSG = "Error Message"/>

```

MOD_NETWORK_SETTINGS

The MOD_NETWORK_SETTINGS command modifies certain network settings. This command is only valid inside a RIB_INFO block. The logged-in user must have the configure RILOE privilege, and the mode of the containing RIB_INFO block must be "write." All of these elements are optional and may be left out. If an element is left out, then the current setting is preserved.

Example:

```

<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <MOD_NETWORK_SETTINGS>
        <SPEED_AUTOSELECT value="No"/>
        <FULL_DUPLEX value="Yes"/>
        <NIC_SPEED value="100"/>
        <DHCP_ENABLE value="Yes"/>
        <IP_ADDRESS value="255.255.255.255"/>
        <SUBNET_MASK value="255.255.0.0"/>
        <GATEWAY_IP_ADDRESS value="255.255.255.255"/>
        <DNS_NAME value="demorib.internal.net"/>
        <DOMAIN_NAME value="internal.net"/>
        <DHCP_GATEWAY value="No"/>
        <DHCP_DNS_SERVER value="No"/>
        <DHCP_STATIC_ROUTE value="No"/>
        <REG_WINS_SERVER value="No"/>
        <PRIM_DNS_SERVER value="255.255.255.255"/>
        <SEC_DNS_SERVER value="255.255.255.255"/>
        <STATIC_ROUTE_1 DEST="255.255.0.0"
          GATEWAY="255.0.0.0"/>
        <STATIC_ROUTE_2 DEST="255.255.0.0"
          GATEWAY="255.0.0.0"/>
        <WEB_AGENT_IP_ADDRESS value="255.255.255.255"/>
      </MOD_NETWORK_SETTINGS>
    </RIB_INFO>
  </LOGIN>
</RIBCL>

```

```
        </MOD_NETWORK_SETTINGS>  
    </RIB_INFO>  
    </LOGIN>  
</RIBCL>
```

MOD_NETWORK_SETTINGS Parameters

SPEED_AUTOSELECT is used to automatically select the transceiver speed. The possible values are "Yes" or "No." It is case insensitive.

FULL_DUPLEX is used to decide if the RILOE II is to support full-duplex or half-duplex mode. It is only applicable if SPEED_AUTOSELECT was set to "No." The possible values are "Yes" or "No." It is case insensitive.

NIC_SPEED is used to set the transceiver speed if SPEED_AUTOSELECT was set to "No." The possible values are "10" or "100." Any other values will result in a syntax error.

DHCP_ENABLE is used to enable DHCP. The possible values are "Yes" or "No." It is case insensitive.

IP_ADDRESS is used to select the IP address for the RILOE II if DHCP is not enabled. If an empty string is entered, the current value is deleted.

SUBNET_MASK is used to select the subnet mask for the RILOE II if DHCP is not enabled. If an empty string is entered, the current value is deleted.

GATEWAY_IP_ADDRESS is used to select the default gateway IP address for the RILOE II if DHCP is not enabled. If an empty string is entered, the current value is deleted.

DNS_NAME is used to specify the DNS name for the RILOE II. If an empty string is entered, the current value is deleted.

DOMAIN_NAME is used to specify the domain name for the network where the RILOE II resides. If an empty string is entered, the current value is deleted.

DHCP_GATEWAY specifies if the DHCP-assigned gateway address is to be used. The possible values are "Yes" or "No." It is case sensitive. This selection is only valid if DHCP is enabled.

DHCP_DNS_SERVER specifies if the DHCP-assigned DNS server is to be used. The possible values are "Yes" or "No." It is case sensitive. This selection is only valid if DHCP is enabled.

DHCP_WINS_SERVER specifies if the DHCP-assigned WINS server is to be used. The possible values are "Yes" or "No." It is case sensitive. This selection is only valid if DHCP is enabled.

DHCP_STATIC_ROUTE specifies if the DHCP-assigned static routes are to be used. The possible values are "Yes" or "No." It is case sensitive. This selection is only valid if DHCP is enabled.

REG_WINS_SERVER specifies if the RILOE II needs to register with the WINS server. The possible values are "Yes" or "No." It is case sensitive. This selection is only valid if DHCP is enabled.

PRIM_DNS_SERVER specifies the IP address of the primary DNS server. This parameter is only relevant if the DHCP-assigned DNS server address feature is disabled. If an empty string is entered, the current value is deleted.

SEC_DNS_SERVER specifies the IP address of the secondary DNS server. This parameter is only relevant if the DHCP-assigned DNS server address feature is disabled. If an empty string is entered, the current value is deleted.

TER_DNS_SERVER specifies the IP address of the tertiary DNS server. This parameter is only relevant if the DHCP-assigned DNS server address feature is disabled. If an empty string is entered, the current value is deleted.

PRIM_WINS_SERVER specifies the IP address of the primary WINS server. This parameter is only relevant if the DHCP-assigned WINS server address feature is disabled. If an empty string is entered, the current value is deleted.

SEC_WINS_SERVER specifies the IP address of the secondary WINS server. This parameter is only relevant if the DHCP-assigned WINS server address feature is disabled. If an empty string is entered, the current value is deleted.

STATIC_ROUTE_1, STATIC_ROUTE_2, and STATIC_ROUTE_3 are used to specify the destination and gateway IP addresses of the static routes. The following two parameters are used within the static route commands. If an empty string is entered, the current value is deleted.

- DEST specifies the destination IP addresses of the static route. This parameter is only relevant if the DHCP-assigned static route feature is disabled. If an empty string is entered, the current value is deleted.
- GATEWAY specifies the gateway IP addresses of the static route. This parameter is only relevant if the DHCP-assigned static route feature is disabled. If an empty string is entered, the current value is deleted.

WEB_AGENT_IP_ADDRESS specifies the address for the Web-enabled agents. If an empty string is entered, the current value is deleted.

NOTE: The RILOE II is rebooted to apply the changes after MOD_NETWORK_SETTINGS has been closed.

MOD_NETWORK_SETTINGS Runtime Errors

The possible MOD_NETWORK_SETTINGS error messages include:

- RIB information is open for read-only access. Write access is required for this operation.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

DIR_INFO

The DIR_INFO command is used to display information on the server. Only commands that are DIR_INFO type commands are valid inside the DIR_INFO block.

```
<DIR_INFO MODE="read">
</DIR_INFO>
```

DIR_INFO Parameter

MODE is a specific string parameter with a maximum length of 10 characters that specifies what you intend to do with the user information. Valid arguments are "read" and "write."

DIR_INFO Runtime Errors

- Mode parameter must not be blank.
- User does not have correct privilege for action.

GET_DIR_CONFIG

The GET_DIR_CONFIG command gets the directory configuration of the RILOE II. This command must be contained within a DIR_INFO block. All parameters are optional. The user must be logged in with login privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <DIR_INFO MODE="read">
      <GET_DIR_CONFIG/>
    </DIR_INFO>
  </LOGIN>
</RIBCL>
```

GET_DIR_CONFIG Parameters

There are no parameters for this command.

GET_DIR_CONFIG Runtime Errors

There are no errors for this command.

GET_DIR_CONFIG Return Messages

A possible GET_DIR_CONFIG return message is:

```
<RESPONSE
STATUS="0x0000"
MSG = 'No Error'
/>
<GET_DIR_CONFIG
```

```
DIR_AUTHENTICATION_ENABLED = "YES"
DIR_LOCAL_USER_ACCT = "YES"
DIR_SERVER_ADDRESS = "server1.hprib.labs"
DIR_SERVER_PORT = "636"
DIR_OBJECT_DN = "CN=SERVER1_RIB, OU=RIB, DC=HPRIB,
DC=LABS"
DIR_USER_CONTEXT1 = "CN=Users0, DC=HPRIB0, DC=LABS"
DIR_USER_CONTEXT2 = "CN=Users1, DC=HPRIB1, DC=LABS"
DIR_USER_CONTEXT3 = ""
/>
```

A possible unsuccessful request is:

```
<RESPONSE
  STATUS = "0x0001"
  MSG = "Error Message"/>
```

MOD_DIR_CONFIG

The MOD_DIR_CONFIG command will modify certain directory settings. Directories are used for user authentication. This command is only valid inside a DIR_INFO block. The logged-in user needs to have configure RILOE privilege and the mode of the containing DIR_INFO block must be "write." All of these parameters are optional and may be left out. If a parameter is left out, then the current setting is preserved. If any value is set to an empty string, then the previous value is erased.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <DIR_INFO MODE="write">
      <MOD_DIR_CONFIG>
        <DIR_AUTHENTICATION_ENABLED value="Yes"/>
        <DIR_LOCAL_USER_ACCT value="Yes"/>
        <DIR_SERVER_ADDRESS value="16.141.100.44"/>
        <DIR_SERVER_PORT value="636"/>
        <DIR_OBJECT_DN value="CN=server1_rib, OU=RIB,
        DC=HPRIB, DC=LABS"/>
        <DIR_OBJECT_PASSWORD value="password"/>
        <DIR_USER_CONTEXT_1 value="CN=Users, DC=HPRIB,
        DC=LABS"/>
      </MOD_DIR_CONFIG>
```

```
</DIR_INFO>  
</LOGIN>  
</RIBCL>
```

MOD_DIR_CONFIG Parameters

DIR_AUTHENTICATION_ENABLED enables or disables directory authentication. The possible values are "Yes" and "No."

DIR_LOCAL_USER_ACCT enables or disables local user accounts.

DIR_SERVER_ADDRESS indicates the location of the directory server. The directory server location is specified as an IP address or DNS name.

DIR_SERVER_PORT indicates the port number used to connect to the directory server. This value is obtained from the directory administrator. The secured LDAP port is 636, but the directory server can be configured for a different port number.

DIR_OBJECT_DN specifies the unique name of the RILOE II board in the directory server. This value is obtained from the directory administrator. Distinguished names are limited to 256 characters.

DIR_OBJECT_PASSWORD specifies the password associated with the RILOE II object in the directory server. Passwords are limited to 40 characters.

DIR_USER_CONTEXT_1, DIR_USER_CONTEXT_2, and DIR_USER_CONTEXT_3 specify searchable contexts used to locate the user when the user is trying to authenticate using directories. If the user could not be located using the first path, then the parameters specified in the second and third paths are used. The values for these parameters are obtained from the directory administrator. Directory User Contexts are limited to 128 characters each.

MOD_DIR_CONFIG Runtime Errors

The possible MOD_DIR_CONFIG error messages include:

- Directory information is open for read-only access. Write access is required for this operation.

- Logged-in user does not have required privilege for this command.

GET_GLOBAL_SETTINGS

The GET_GLOBAL_SETTINGS command allows the user to retrieve the global settings. GET_GLOBAL_SETTINGS must be contained inside a RIB_INFO block. The user must be logged in with login privilege for this command. The information returned by this command is the information that can be changed by the MOD_GLOBAL_SETTINGS command.

GET_GLOBAL_SETTINGS Parameters

There are no parameters for this command.

GET_GLOBAL_SETTINGS Runtime Errors

There are no errors for this command.

GET_GLOBAL_SETTINGS Return Messages

A possible GET_GLOBAL_SETTINGS return message is:

```
<GET_GLOBAL_SETTINGS
  SESSION_TIMEOUT="120"
  F8_PROMPT_ENABLED="YES"
  HOST_KEYBOARD_ENABLED="YES"
  REMOTE_CONSOLE_PORT_STATUS = "ENABLED"
  POCKETPC_ACCESS = "NO"
  EMS_STATUS = "NO"
  BYPASS_POWER_CABLE_REPORTING = "NO"
  CIPHER_STRENGTH = "40"
  HTTPS_PORT = "443"
  HTTP_PORT = "80"
  REMOTE_CONSOLE_PORT = "23"
  SNMP_ADDRESS_1 = " "
  SNMP_ADDRESS_2 = " "
  SNMP_ADDRESS_3 = " "
  OS_TRAPS = "NO"
  RIB_TRAPS = "NO"
```

```

    CIM_SECURITY_MASK ="MEDIUM"
  />

```

The following is an example of an unsuccessful request:

```

<RESPONSE
  STATUS = "0x0001"
  MSG = "Error Message"/>

```

MOD_GLOBAL_SETTINGS

This command modifies certain global settings. This command is only valid inside a RIB_INFO block. The logged-in user must have the configure RILOE privilege, and RIB_INFO must be in write mode. All of these elements are optional and may be left out. If an element is left out, then the current setting is preserved.

Example:

```

<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <MOD_GLOBAL_SETTINGS>
        <SESSION_TIMEOUT value="60"/>
        <F8_PROMPT_ENABLED value="Yes"/>
        <HOST_KEYBOARD_ENABLED value="Yes"/>
        <REMOTE_CONSOLE_PORT_STATUS value="3"/>
        <POCKETPC_ACCESS value="Yes"/>
        <REMOTE_CONSOLE_ENCRYPTION value="Yes"/>
        <CIPHER_STRENGTH value="128"/>
        <HTTPS_PORT value="443"/>
        <HTTP_PORT value="80"/>
        <REMOTE_CONSOLE_PORT value="23"/>
        <SNMP_ADDRESS_1 value="123.124.125.126"/>
        <SNMP_ADDRESS_2 value="Test"/>
        <SNMP_ADDRESS_3 value="Test"/>
        <OS_TRAPS value="Yes"/>
        <RIB_TRAPS value="No"/>
        <EMS_SETTINGS value="No"/>
        <BYPASS_POWER_CABLE_REPORTING value="No"/>
        <CIM_SECURITY_MASK="3"/>
      </MOD_GLOBAL_SETTINGS>
    </RIB_INFO>
  </LOGIN>

```

</RIBCL>

MOD_GLOBAL_SETTINGS Parameters

SESSION_TIMEOUT determines the maximum session timeout value in minutes. The accepted values are from 0 to 120. If a value greater than 120 is specified, the SESSION_TIMEOUT returns an error.

F8_PROMPT_ENABLED determines if the F8 prompt for ROM-based configuration is displayed during POST. The possible values are "Yes" or "No."

HOST_KEYBOARD_ENABLED determines if the host keyboard is enabled or disabled. The possible values are "Yes" or "No."

REMOTE_CONSOLE_PORT_STATUS determines the configuration for the Remote Console port. The valid values for this setting are:

- 0 = No Change
- 1 = Disabled
- 2 = Automatic
- 3 = Enabled

In the Automatic setting, the Remote Console port is enabled only when a Remote Console session through a browser is in progress, and is disabled otherwise.

POCKETPC_ACCESS determines if the PocketPC access is allowed. The possible values are "Yes" or "No."

REMOTE_CONSOLE_ENCRYPTION determines if Remote Console Data Encryption is enabled or disabled. The possible values are "Yes" and "No."

CIPHER_STRENGTH determines the SSL encryption strength. The possible values are "40" and "128," which enable 40-bit and 128-bit encryption respectively.

HTTPS_PORT—Specifies the HTTPS (SSL) port number for the RILOE II. If this value is changed, the RILOE II must be reset.

HTTP_PORT—Specifies the HTTP port number for the RILOE II. If this value is changed, the RILOE II must be reset.

REMOTE_CONSOLE_PORT—This parameter specifies the Remote Console port for the RILOE II. The RILOE II needs to be reset if this value is changed.

SNMP_ADDRESS_1, **SNMP_ADDRESS_2**, and **SNMP_ADDRESS_3** are the addresses that receive traps sent to the user. Each of these parameters can be any valid IP address or DNS name and has a maximum value of 50 characters.

SNMP Traps send trap information according to the value, if the tag is set with a value attribute. If the tag is not set, "No" is assumed, and traps are not sent.

OS_TRAPS indicates that the user should receive SNMP traps that are generated by the operating system. The possible values are "Yes" and "No." If the value is not set, then the default "No" is assumed, and traps are not sent.

RIB_TRAPS indicates that the user should receive SNMP traps that are generated by the RIB. The possible values are "Yes" and "No." If the value is not set, then the default "No" is assumed, and traps are not sent.

BYPASS_POWER_CABLE_REPORTING determines how the external power cable status is reported. The possible values are "Yes" and "No."

- The value of "Yes" causes the RILOE II board to report to the operating system that the external power cable is connected irrespective of the actual status. This will cause Insight Manager 7 to report a green status for the board if the external cable is not connected, barring other status problems.
- The value of "No" will cause the board to report the true status of the external power connector. This will cause RILOE II to report the status of the board as degraded if the external connector is not connected.

CIM_SECURITY_MASK accepts an integer between 0 and 4. The possible values are:

- **0**—No change
- **1**—None (No data is returned to Insight Manager 7.)

- **2**—Low (Name and status data are returned. Associations are present if SNMP pass-through is supported. If not, the server and management processor are separate entities in the device list.)
- **3**—Medium (RILOE II and server associations are present but the summary page contains less detail than at high security.)
- **4**—High (Associations are present and all data is present on the summary page.)

Each value indicates the level of data returned to an Insight Manager 7 request.

MOD_GLOBAL_SETTINGS Runtime Errors

The possible MOD_GLOBAL_SETTINGS error messages include:

- RIB information is open for read-only access. Write access is required for this operation.
- The remote console port status value specified is invalid. It needs to be either 0, 1, 2, or 3.
- Invalid SSL Encryption Strength specified. The valid values are 40 and 128.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

CLEAR_EVENTLOG

The CLEAR_EVENTLOG command clears the RILOE II Event Log. The CLEAR_EVENTLOG command must be displayed within a RIB_INFO block, and RIB_INFO must be in write mode. To clear the event log, the user must be logged in with the configure RILOE privilege.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <CLEAR_EVENTLOG/>
    </RIB_INFO>
```

```
</LOGIN>  
</RIBCL>
```

CLEAR_EVENTLOG Parameters

There are no parameters for this command.

CLEAR_EVENTLOG Runtime Errors

The possible CLEAR_EVENTLOG error messages are:

- RIB information is open for read-only access. Write access is required for this operation.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

UPDATE_RIB_FIRMWARE

The UPDATE_RIB_FIRMWARE command copies the firmware upgrade file to the RILOE II, starts the upgrade process and reboots the board after the image has been flashed successfully. The UPDATE_RIB_FIRMWARE command must be displayed within a RIB_INFO block, and RIB_INFO must be in write mode. The RILOE II is reset after the firmware upgrade is complete. To update the firmware, the user must be logged in with the configure RILOE privilege.

Example:

```
<RIBCL VERSION="2.0">  
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">  
    <RIB_INFO MODE="write">  
      <UPDATE_RIB_FIRMWARE  
        IMAGE_LOCATION="C:\firmware.brk"/>  
    </RIB_INFO>  
  </LOGIN>  
</RIBCL>
```

UPDATE_RIB_FIRMWARE Parameters

IMAGE_LOCATION takes the full path file name of the firmware upgrade file.

UPDATE_RIB_FIRMWARE Runtime Errors

The possible UPDATE_RIB_FIRMWARE error messages include:

- RIB information is open for read-only access. Write access is required for this operation.
- Unable to open the firmware image update file.
- Unable to read the firmware image update file.
- The firmware upgrade file size is too big.
- The firmware image file is not valid.
- A valid firmware image has not been loaded.
- The flash process could not be started.
- IMAGE_LOCATION must not be blank.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

GET_FW_VERSION

The GET_FW_VERSION command returns the version and date of the firmware on the RILOE II.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="read">
      <GET_FW_VERSION/>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

GET_FW_VERSION Parameters

There are no parameters for this command.

GET_FW_VERSION Runtime Errors

There are no errors for this command.

GET_FW_VERSION Return Messages

The following information is returned within the response:

```
FIRMWARE VERSION = <firmware version>
FIRMWARE DATE = <firmware date>
MANAGEMENT PROCESSOR = <management processor type>
SSL ENCRYPTION STRENGTH = "40-BIT" OR "128-BIT"
```

INSERT_VIRTUAL_FLOPPY

The INSERT_VIRTUAL_FLOPPY command copies a floppy image to the RILOE II. The INSERT_VIRTUAL_FLOPPY command must be displayed within a RIB_INFO element, and RIB_INFO must be in write mode. The user must be logged in with virtual media privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <INSERT_VIRTUAL_FLOPPY IMAGE_LOCATION="C:\test.img"/>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

INSERT_VIRTUAL_FLOPPY Parameter

IMAGE_LOCATION takes the full path file name for the floppy image file.

INSERT_VIRTUAL_FLOPPY Runtime Errors

The possible INSERT_VIRTUAL_FLOPPY error messages are:

- RIB information is open for read-only access. Write access is required for this operation.
- IMAGE_LOCATION must not be blank.
- The Virtual Floppy image is invalid.
- Unable to open the Virtual Floppy image file.
- Unable to read the Virtual Floppy image file.
- The Virtual Floppy image file size is too big.
- No image present in the Virtual Floppy drive.
- Failed to allocate Virtual Floppy image space.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

EJECT_VIRTUAL_FLOPPY

The EJECT_VIRTUAL_FLOPPY command ejects the Virtual Floppy image if one is inserted. The EJECT_VIRTUAL_FLOPPY command must be displayed within a RIB_INFO element, and RIB_INFO must be in write mode. The user must be logged in with virtual media privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <EJECT_VIRTUAL_FLOPPY/>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

EJECT_VIRTUAL_FLOPPY Parameters

There are no parameters for this command.

EJECT_VIRTUAL_FLOPPY Runtime Errors

The possible EJECT_VIRTUAL_FLOPPY error messages are:

- RIB information is open for read-only access. Write access is required for this operation.
- No image present in the Virtual Floppy drive.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

COPY_VIRTUAL_FLOPPY

The COPY_VIRTUAL_FLOPPY command copies a floppy image from the RILOE II to the local system. The COPY_VIRTUAL_FLOPPY command must be displayed within a RIB_INFO element, and RIB_INFO must be in write mode. The user must be logged in with virtual media privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <COPY_VIRTUAL_FLOPPY IMAGE_LOCATION="C:\test.img"/>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

COPY_VIRTUAL_FLOPPY Parameter

IMAGE_LOCATION takes the full path file name for the location where the floppy image file needs to be copied.

COPY_VIRTUAL_FLOPPY Runtime Errors

The possible COPY_VIRTUAL_FLOPPY error messages are:

- RIB information is open for read-only access. Write access is required for this operation.
- IMAGE_LOCATION must not be blank.
- Unable to open the Virtual Floppy image file.
- Unable to write the Virtual Floppy image file.
- No image present in the Virtual Floppy drive.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

GET_VF_STATUS

The GET_VF_STATUS command gets the Virtual Floppy Drive status from the RILOE II. The GET_VF_STATUS command must be displayed within a RIB_INFO element, and RIB_INFO must be in write mode. The user must be logged in with login privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="read">
      <GET_VF_STATUS/>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

GET_VF_STATUS Parameters

There are no parameters for this command.

GET_VF_STATUS Runtime Errors

There are no errors for this command.

GET_VF_STATUS Return Messages

The following information is returned within the response:

```
BOOT_OPTION = BOOT_ALWAYS | BOOT_ONCE | NO_BOOT
WRITE_PROTECT_FLAG = YES | NO
IMAGE_INSERTED = YES | NO
```

SET_VF_STATUS

The SET_VF_STATUS command sets the Virtual Floppy Drive status on the RILOE II. The SET_VF_STATUS command must be displayed within a RIB_INFO element, and RIB_INFO must be in write mode. All the parameters in the command are optional. The user must be logged in with virtual media privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <SET_VF_STATUS>
        <VF_BOOT_OPTION="BOOT_ONCE"/>
        <VF_WRITE_PROTECT value="Yes"/>
      </SET_VF_STATUS>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

SET_VF_STATUS Parameters

VF_BOOT_OPTION specifies the boot option parameter for the Virtual Floppy. The possible values are "BOOT_ALWAYS", "BOOT_ONCE", or "NO_BOOT." The value is case sensitive.

VF_WRITE_PROTECT sets the write-protect flag value for the Virtual Floppy. The possible values are "Yes" or "No."

SET_VF_STATUS Runtime Errors

The possible SET_VF_STATUS error messages are:

- RIB information is open for read-only access. Write access is required for this operation.
- An invalid Virtual Floppy option has been given.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

HOTKEY_CONFIG

The HOTKEY_CONFIG command configures the Remote Console hot key settings on the RILOE II. The HOTKEY_CONFIG command must be displayed within a RIB_INFO element, and RIB_INFO must be in write mode. All of the subelements of the command are optional. The user must be logged in with login privilege to execute this command.

Uppercase letters are not supported, and they will be converted automatically to lowercase. If either a double quote or a single quote is used, it must be different from the delimiter. CTRL subelements that are not present are not modified. Specifying a blank string removes the current value.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <HOTKEY_CONFIG>
        <CTRL_T value="CTRL,ALT,ESC"/>
        <CTRL_U value="L_SHIFT,F10,F12"/>
        <CTRL_V value=""/>
        <CTRL_Y value=""/>
        <CTRL_X value=""/>
        <CTRL_Y value=""/>
```

```
</HOTKEY_CONFIG>  
</RIB_INFO>  
</LOGIN>  
</RIBCL>
```

HOTKEY_CONFIG Parameters

CTRL_T specifies settings for the CTRL_T hot key. The settings need to be separated by commas. For example, CTRL_T="CTRL,ALT,ESC." Up to five keystrokes can be configured for each hot key.

CTRL_U specifies settings for the CTRL_U hot key. The settings need to be separated by commas. For example, CTRL_U="CTRL,ALT,ESC." Up to five keystrokes can be configured for each hot key.

CTRL_V specifies settings for the CTRL_V hot key. The settings need to be separated by commas. For example, CTRL_V="CTRL,ALT,ESC." Up to five keystrokes can be configured for each hot key.

CTRL_W specifies settings for the CTRL_W hot key. The settings need to be separated by commas. For example, CTRL_W="CTRL,ALT,ESC." Up to five keystrokes can be configured for each hot key.

CTRL_X specifies settings for the CTRL_X hot key. The settings need to be separated by commas. For example, CTRL_X="CTRL,ALT,ESC." Up to five keystrokes can be configured for each hot key.

CTRL_Y specifies settings for the CTRL_Y hot key. The settings need to be separated by commas. For example, CTRL_Y="CTRL,ALT,ESC." Up to five keystrokes can be configured for each hot key.

HOTKEY_CONFIG Runtime Errors

The possible HOTKEY_CONFIG error messages include:

- RIB information is open for read-only access. Write access is required for this operation.
- The hot key parameter specified is not valid.
- Invalid number of hot keys. The maximum allowed is five.

- User does not have correct privilege for action.

SERVER_INFO

The SERVER_INFO command tells the firmware that the configuration of the RILOE II is about to be changed.

Example:

```
<SERVER_INFO MODE="read">
..... SERVER_INFO commands .....
</SERVER_INFO>
```

SERVER_INFO Parameter

MODE is a specific string parameter that has a maximum length of 10 characters. It tells the RILOE II what you intend to do with the server information. Valid arguments are "read" and "write." If the parameter is open in write mode, then both reading and writing are enabled. If it is open in read mode, the user cannot perform any server actions. If this parameter is not specified, "read" is assumed.

SERVER_INFO Runtime Error

A possible SERVER_INFO error is: Mode parameter must not be blank.

GET_HOST_POWER_STATUS

The GET_HOST_POWER_STATUS command displays the server power state from the Virtual Power Button cable. The GET_HOST_POWER_STATUS command must be displayed within a SERVER_INFO element, and SERVER_INFO must be in write mode. The user must be logged in with login privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
```

```
<SERVER_INFO MODE="write">
<GET_HOST_POWER_STATUS/>
</SERVER_INFO>
</LOGIN>
</RIBCL>
```

GET_HOST_POWER_STATUS Parameters

There are no parameters for this command.

GET_HOST_POWER_STATUS Runtime Errors

The possible GET_HOST_POWER_STATUS error messages include:

- Host power is OFF.
- Host power is ON.

GET_HOST_POWER_STATUS Return Messages

The following information is returned within the response:

```
<GET_HOST_POWER
  HOST POWER="OFF"
/>
```

SET_HOST_POWER

The SET_HOST_POWER command sets the Virtual Power Button feature. This feature is used to turn the server on or off if the feature is supported. The SET_HOST_POWER command must be displayed within a SERVER_INFO element, and SERVER_INFO must be in write mode. The user must be logged in with reset server privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <SERVER_INFO MODE="write">
      <SET_HOST_POWER HOST_POWER="Yes"/>
    </SERVER_INFO>
  </LOGIN>
</RIBCL>
```

```
</SERVER_INFO>  
</LOGIN>  
</RIBCL>
```

SET_HOST_POWER Parameters

HOST_POWER enables or disables the Virtual Power Button. The possible values are "Yes" or "No."

SET_HOST_POWER Runtime Errors

The possible SET_HOST_POWER error messages include:

- Server information is open for read-only access. Write access is required for this operation.
- Virtual Power Button feature is not supported on this server.
- Host power is already ON.
- Host power is already OFF.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

GET_VPB_CABLE_STATUS

The GET_VPB_CABLE_STATUS command displays the Virtual Power Button cable status on the RILOE II. The GET_VPB_CABLE_STATUS command must be contained within a SERVER_INFO block, and SERVER_INFO must be in write mode. The user must be logged in with login privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">  
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">  
    <SERVER_INFO MODE="write">  
      <GET_VPB_CABLE_STATUS/>  
    </SERVER_INFO>  
  </LOGIN>
```

```
</RIBCL>
```

GET_VPB_CABLE_STATUS Parameters

There are no parameters for this command.

GET_VPB_CABLE_STATUS Runtime Errors

The possible GET_VPB_CABLE_STATUS error messages include:

- Virtual Power Button cable is attached.
- Virtual Power Button cable is not attached.

GET_VPB_CABLE_STATUS Return Messages

The following information is returned within the response:

```
<GET_VPB_CABLE
  VIRTUAL POWER BUTTON CABLE="ATTACHED"
/>
```

RESET_SERVER

The RESET_SERVER command resets the server if the server is turned on. The RESET_SERVER command must be displayed within a SERVER_INFO element, and SERVER_INFO must be in write mode. The user must be logged in with reset server privilege to execute this command.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <SERVER_INFO MODE="write">
      <RESET_SERVER/>
    </SERVER_INFO>
  </LOGIN>
</RIBCL>
```

RESET_SERVER Parameters

There are no parameters for this command.

RESET_SERVER Errors

The possible RESET_SERVER error messages include:

- Server information is open for read-only access. Write access is required for this operation.
- Server is currently powered off.
- User does not have correct privilege for action.
- Logged-in user does not have required privilege for this command.

GET_ALL_CABLES_STATUS

The GET_ALL_CABLES_STATUS command displays the status of all the cables on the RILOE II. The GET_ALL_CABLES_STATUS command must be contained within a SERVER_INFO block.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <SERVER_INFO MODE="read">
      <GET_ALL_CABLES_STATUS/>
    </SERVER_INFO>
  </LOGIN>
</RIBCL>
```

GET_ALL_CABLES_STATUS Parameters

There are no parameters for this command.

GET_ALL_CABLES_STATUS Runtime Errors

There are no errors for this command.

GET_ALL_CABLE_STATUS Return Messages

The following information is returned within the response:

```
<GET_ALL_CABLES_STATUS
  EXTERNAL_POWER_ADAPTER="NOT CONNECTED"
  AUXILLARY_POWER_CABLE="CONNECTED"
  16-PIN_CABLE="NOT CONNECTED"
  30-PIN_CABLE="CONNECTED"
  VPB_CABLE="NOT CONNECTED"
  REMOTE_INSIGHT_KEYBOARD_CABLE="HOST_OFF"
  REMOTE_INSIGHT_MOUSE_CABLE="HOST_OFF"
/>
```


Lights-Out DOS Utility

In This Section

Overview of the Lights-Out DOS Utility	199
CPQLODOS General Guidelines	199
Command Line Arguments	200
CPQLODOS	202
MOD_NETWORK_SETTINGS	202
MOD_DIR_CONFIG	205
ADD_USER	207

Overview of the Lights-Out DOS Utility

CPQLODOS is a command line utility that is a part of the SmartStart Scripting Toolkit. It is intended to be an initial configuration program to set up only those essential RILOE II settings necessary to allow one of the other full-featured configuration methods. Because of this limited usage model, it processes only a small subset of the RILOE II scripting language.

NOTE: CPQLODOS is a DOS-only tool that requires MS-DOS® 6.0 or higher. Lights-Out scripting is not supported on Linux operating systems or when using the Novell NetWare Client.

CPQLODOS enables you to configure features exposed through F8 startup or the graphical user interface. This utility is not intended for continued administration. The RIBCL should be used to administer user rights and network functionality on the server.

CPQLODOS General Guidelines

In this section, all of the commands are grouped by functionality. All commands that manipulate user information are grouped together. Grouping commands allows the firmware to view the data to be manipulated as a block of information, similar to a text document, allowing for multithreaded access to the different kinds of information.

An opening command opens a database. The database remains open until the matching closing command is sent. All changes made within a single command block are applied simultaneously when the database is closed. Any errors within the block cause the enclosed changes to be discarded.

An example of an opening command and its matching closing command are as follows:

```
<USER_INFO>  
</USER_INFO>
```

In all examples, the opening and closing commands are displayed.

Command Line Arguments

The following table lists the arguments recognized by CPQLODOS.

Command Line Argument	Description
/HELP or /?	These arguments display simple help messages.
/RESET_RILOE	This argument resets the RILOE II board to default factory settings.
/DETECT	This argument detects the RILOE II board on the target server.
/RESET_RILOE	This argument resets the RILOE II card.
/VIRT_FLOPPY	This argument ignores the virtual floppy inserted error.
/MIN_FW	This argument enables you to set the minimum firmware version on which the RILOE II board runs.
/GET_STATUS	This argument returns the status of the RILOE II.
/GET_HOSTINFO	This argument retrieves and displays the current host server information on the RILOE II board and displays the server name and number.
/GET_USERINFO	This argument obtains the current users stored in the RILOE II board and displays the names, login names, and security mask information.
/GET_NICCONFIG	This argument retrieves and displays the NIC settings stored in the RILOE II board.
/GET_DHCPCONFIG	This argument retrieves and displays the DHCP settings stored in the RILOE II board.
/WRITE_XML=A:\DL360.RLO	This argument reads the Shared Memory Interface (SMIF) settings on the RILOE II board and writes the NIC, DHCP, and user settings into an XML hardware configuration script file.
/LOAD_XML=A:\DL360.RLO	This argument loads the script file and applies its changes to the current configuration on the RILOE II board.
/VERIFY_XML	This argument verifies the accuracy of the script file and generates an error message for any incorrect data.

CPQLODOS processes the <CPQLODOS>, the <MOD_NETWORK_SETTINGS>, the <MOD_DIR_CONFIG>, and the <ADD_USER> XML scripting language blocks. Only those parameters referenced in the following sections are supported.

CPQLODOS

This command is used to start and end a CPQLODOS session. It can be used only once, and it must be the first and last statement in an XML script.

Example:

```
<CPQLODOS VERSION="2.0">
<\CPQLODOS>
```

CPQLODOS Parameter

VERSION is a numeric string that indicates the version of CPQLODOS necessary to process this script. The VERSION string is compared to the version that CPQLODOS can process. An error is returned if the version of CPQLODOS and the version of the script do not match. The VERSION parameter can never be blank.

CPQLODOS Runtime Error

The possible CPQLODOS error messages include Version must not be blank.

MOD_NETWORK_SETTINGS

This command modifies certain network settings. All of the elements are optional and any options not specified will be set to the factory default.

Example:

```
<MOD_NETWORK_SETTINGS>
  <SPEED_AUTOSELECT VALUE = "N"/>
  <NIC_SPEED VALUE = "10"/>
  <FULL_DUPLEX VALUE = "N"/>
  <IP_ADDRESS VALUE = "192.168.1.2"/>
  <SUBNET_MASK VALUE = "255.255.255.0"/>
  <GATEWAY_IP_ADDRESS VALUE = "192.168.1.222"/>
  <DNS_NAME VALUE = "RIB0002A5617D3B"/>
  <PRIM_DNS_SERVER value = "192.168.2.200"/>
```

```

<DOMAIN_NAME VALUE = "riloe.mgmt.net"/>
<DHCP_ENABLE VALUE = "Y"/>
<DHCP_GATEWAY VALUE = "Y"/>
<DHCP_DNS_SERVER VALUE = "Y"/>
<DHCP_STATIC_ROUTE VALUE = "Y"/>
<DHCP_WINS_SERVER VALUE = "Y"/>
<REG_WINS_SERVER VALUE = "Y"/>
<PRIM_WINS_SERVER VALUE = "192.168.2.220"/>
<STATIC_ROUTE_1 DEST = "192.168.5.1" GATEWAY =
"192.168.5.200"/>
<STATIC_ROUTE_2 DEST = "192.168.5.2" GATEWAY =
"192.168.5.200"/>
<STATIC_ROUTE_3 DEST = "192.168.5.3" GATEWAY =
"192.168.5.200"/>
</MOD_NETWORK_SETTINGS>

```

MOD_NETWORK_SETTINGS Parameters

SPEED_AUTOSELECT is used to automatically select the transceiver speed. The possible values are "Yes" or "No." It is case insensitive.

FULL_DUPLEX is used to decide if the RILOE II is to support full-duplex or half-duplex mode. It is only applicable if **SPEED_AUTOSELECT** was set to "No." The possible values are "Yes" or "No." It is case insensitive.

NIC_SPEED is used to set the transceiver speed if **SPEED_AUTOSELECT** was set to "No." The possible values are "10" or "100." Any other values will result in a syntax error.

DHCP_ENABLE is used to enable DHCP. The possible values are "Yes" or "No." It is case insensitive.

IP_ADDRESS is used to select the IP address for the RILOE II if DHCP is not enabled. If an empty string is entered, the current value is deleted.

SUBNET_MASK is used to select the subnet mask for the RILOE II if DHCP is not enabled. If an empty string is entered, the current value is deleted.

GATEWAY_IP_ADDRESS is used to select the default gateway IP address for the RILOE II if DHCP is not enabled. If an empty string is entered, the current value is deleted.

DNS_NAME is used to specify the DNS name for the RILOE II. If an empty string is entered, the current value is deleted.

DOMAIN_NAME is used to specify the domain name for the network where the RILOE II resides. If an empty string is entered, the current value is deleted.

DHCP_GATEWAY specifies if the DHCP-assigned gateway address is to be used. The possible values are "Yes" or "No." It is case sensitive. This selection is only valid if DHCP is enabled.

DHCP_DNS_SERVER specifies if the DHCP-assigned DNS server is to be used. The possible values are "Yes" or "No." It is case sensitive. This selection is only valid if DHCP is enabled.

DHCP_WINS_SERVER specifies if the DHCP-assigned WINS server is to be used. The possible values are "Yes" or "No." It is case sensitive. This selection is only valid if DHCP is enabled.

DHCP_STATIC_ROUTE specifies if the DHCP-assigned static routes are to be used. The possible values are "Yes" or "No." It is case sensitive. This selection is only valid if DHCP is enabled.

REG_WINS_SERVER specifies if the RILOE II needs to register with the WINS server. The possible values are "Yes" or "No." It is case sensitive. This selection is only valid if DHCP is enabled.

PRIM_DNS_SERVER specifies the IP address of the primary DNS server. This parameter is only relevant if the DHCP-assigned DNS server address feature is disabled. If an empty string is entered, the current value is deleted.

SEC_DNS_SERVER specifies the IP address of the secondary DNS server. This parameter is only relevant if the DHCP-assigned DNS server address feature is disabled. If an empty string is entered, the current value is deleted.

TER_DNS_SERVER specifies the IP address of the tertiary DNS server. This parameter is only relevant if the DHCP-assigned DNS server address feature is disabled. If an empty string is entered, the current value is deleted.

PRIM_WINS_SERVER specifies the IP address of the primary WINS server. This parameter is only relevant if the DHCP-assigned WINS server address feature is disabled. If an empty string is entered, the current value is deleted.

SEC_WINS_SERVER specifies the IP address of the secondary WINS server. This parameter is only relevant if the DHCP-assigned WINS server address feature is disabled. If an empty string is entered, the current value is deleted.

STATIC_ROUTE_1, STATIC_ROUTE_2, and STATIC_ROUTE_3 are used to specify the destination and gateway IP addresses of the static routes. The following two parameters are used within the static route commands. If an empty string is entered, the current value is deleted.

- DEST specifies the destination IP addresses of the static route. This parameter is only relevant if the DHCP-assigned static route feature is disabled. If an empty string is entered, the current value is deleted.
- GATEWAY specifies the gateway IP addresses of the static route. This parameter is only relevant if the DHCP-assigned static route feature is disabled. If an empty string is entered, the current value is deleted.

WEB_AGENT_IP_ADDRESS specifies the address for the Web-enabled agents. If an empty string is entered, the current value is deleted.

NOTE: The RILOE II is rebooted to apply the changes after MOD_NETWORK_SETTINGS has been closed.

MOD_DIR_CONFIG

This command will modify certain directory services settings. If directory services is enabled, then all of the mandatory parameters must be entered for successful operation of directory services authentication and authorization.

Example:

```
<MOD_DIR_CONFIG>
<DIR_AUTHENTICATION_ENABLED VALUE = " YES"/>
<DIR_LOCAL_USER_ACCT VALUE = "YES"/>
<DIR_SERVER_ADDRESS VALUE = "\"directory.corp.net\""/>
<DIR_SERVER_PORT VALUE = "636"/>
<DIR_OBJECT_DN VALUE = "CN=RILOE2-JJ, OU=RILOES,
DC=RILOEII, DC=HP"/>
<DIR_OBJECT_PASSWORD VALUE = "wingsauce"/>
<DIR_USER_CONTEXT_1 VALUE = "CN=Users, DC=RILOEII,
DC=HP"/>
```

```
<DIR_USER_CONTEXT_2 VALUE = "CN=Mgmt, DC=RILOEII,  
DC=HP" />  
<DIR_USER_CONTEXT_3 VALUE = "CN=Admins, DC=RILOEII,  
DC=HP" />  
</MOD_DIR_CONFIG>
```

MOD_DIR_CONFIG Parameters

DIR_AUTHENTICATION_ENABLED indicates if directory services should be used to determine authentication to and authorization for the RILOE II. The possible values are "Y," "Yes," "N," or "No." The default value is "No." This parameter is optional.

DIR_LOCAL_USER_ACCT indicates if the local user accounts should be used in addition to using directory services user accounts. The possible values are "Y," "Yes," "N," or "No." It is effective only if

DIR_AUTHENTICATION_ENABLED is set to **Yes**. The default value is "Yes." This parameter is optional.

DIR_SERVER_ADDRESS specifies the IP address or DNS name of the computer that the RILOE II will use for directory services operations. The possible values are a string or an IP address. This parameter is mandatory if DIR_AUTHENTICATION_ENABLED is set to **Yes**.

DIR_SERVER_PORT specifies what port number on the directory services server that the RILOE II will use for communication. The possible values are any valid numeric IP port number. The default value is 636 and is an optional parameter.

DIR_OBJECT_DN_VALUE specifies the directory services distinguished name of the RILOE II object in the directory. The possible value is a string that is the appropriate distinguished name of the RILOE II. This parameter is mandatory if DIR_AUTHENTICATION_ENABLED is set to **Yes**.

DIR_OBJECT_PASSWORD specifies a password for the RILOE II that is used to access RILOE II objects. This password is currently unused but will be used in a future version of the firmware.

DIR_USER_CONTEXT_1, DIR_USER_CONTEXT_2, and DIR_USER_CONTEXT_3 specify directory service contexts that will be searched in the authentication and authorization process. When attempting to access a directory service, the user's name is added in front of each context string to form the full user name that is authenticated with directory services. The possible values are any valid directory service context string. These parameters are optional.

ADD_USER

This command is used to add a user to the RILOE II. If there are multiple ADD_USER commands in the XML script, CPQLODOS will use only the settings from the last command.

Example:

```
<ADD_USER
  USER_NAME = "James Madison"
  USER_LOGIN = "jmadison"
  PASSWORD = "president">
</ADD_USER>
```

ADD_USER Parameters

USER_NAME sets the string that will display on the user setup Web page. The possible value is any string less than 41 characters.

USER_LOGIN sets the string that is used in combination with the password string to log in to the RILOE II. The possible value is any string of at least 1 character and no more than 40 characters.

PASSWORD sets the string that is used in combination with the USER_LOGIN string to log in to the RILOE II. The possible value is any string of at least 8 characters and no more than 40 characters.

Technical Support

In This Section

Telephone Numbers.....	209
------------------------	-----

Telephone Numbers

For the name of the nearest HP authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- In other locations, refer to the HP website (<http://www.hp.com>).

For HP technical support:

- In North America, call the HP Technical Support Phone Center at 1-800-652-6672. This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.
- Outside North America, call the nearest HP Technical Support Phone Center. For telephone numbers for worldwide Technical Support Centers, refer to the HP website (<http://www.hp.com>).

Be sure to have the following information available before you call HP:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level

Regulatory Compliance Notices

In This Section

Federal Communications Commission Notice	211
Canadian Notice (Avis Canadien)	213
European Union Notice	213
BSMI Notice.....	214
Japanese Notice	215

Federal Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (for example, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit that is different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett-Packard Company may void the user's authority to operate the equipment.

Declaration of Conformity for Products Marked with the FCC Logo, United States Only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding this product, contact us by mail or telephone:

- Hewlett-Packard Company
P. O. Box 692000, Mail Stop 530113
Houston, Texas 77269-2000
- 1-800-652-6672 (For continuous quality improvement, calls may be recorded or monitored.)

For questions regarding this FCC declaration, contact us by mail or telephone:

- Hewlett-Packard Company
P. O. Box 692000, Mail Stop 510101
Houston, Texas 77269-2000
- 1-281-514-3333

To identify this product, refer to the part, series, or model number found on the product.

Canadian Notice (Avis Canadien)

Class A Equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B Equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Notice



Products bearing the CE marking comply with the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community and, if this product has telecommunication functionality, the R&TTE Directive (1999/5/EC).

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

- EN 55022 (CISPR 22)—Electromagnetic Interference
- EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11)—Electromagnetic Immunity
- EN61000-3-2 (IEC61000-3-2)—Power Line Harmonics
- EN61000-3-3 (IEC61000-3-3)—Power Line Flicker
- EN 60950 (IEC60950)—Product Safety

BSMI Notice

警告使用者:

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Japanese Notice

ご使用になっている装置にVCCIマークが付いていましたら、次の説明文をお読み下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境でを使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

VCCIマークが付いていない場合には、次の点にご注意下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Acronyms and Abbreviations

ACPI

Advanced Configuration and Power Interface

ASCII

American Standard Code for Information Interchange

DHCP

Dynamic Host Configuration Protocol

DNS

Domain Name System

IP

Internet Protocol

LDAP

Lightweight Directory Access Protocol

LED

light-emitting diode

LOM

Lights-Out Management

MMC

Microsoft® Management Console

NIC

network interface controller

POST

Power-On Self-Test

PSP

ProLiant Support Pack

RBSU

ROM-Based Setup Utility

RIBCL

Remote Insight Board Command Language

SNMP

Simple Network Management Protocol

SSL

Secure Sockets Layer

USB

universal serial bus

XML

extensible markup language

Index

A

AC power adapter connection 26
 Active Directory 99
 ADD_USER 156, 207
 adding new users 68
 additional information 209
 administration 68
 administrator information 85
 Advanced System Management Driver 20
 alert and trap problems 133
 application launch 88
 authorized reseller 209

B

batch processing 90
 browsers 45, 46, 136
 BSMI notice 214

C

cable configuration 14, 15, 21, 23
 cable conflicts 11
 cable matrix 16
 cabling 11
 Canadian Notice 213
 CLEAR_EVENTLOG 182
 commands 154, 155, 156, 160, 161, 162, 165,
 167, 168, 169, 171, 175, 176, 178, 182, 183,
 184, 185, 186, 187, 188, 189, 190, 192, 193,
 194, 195, 196
 configuration options 39
 configuration parameters 29
 connectors 11
 COPY_VIRTUAL_FLOPPY 187
 CPQLODOS 199, 202
 creating 60

D

data types 151
 Declaration of Conformity 212
 default settings 133
 DELETE_USER 160
 device drivers, installing 42, 43, 44
 Device Queries 87
 diagnostics 77
 Directory Services 93, 95, 99, 116, 129, 130
 Directory Services errors 146
 Directory Services for eDirectory 116
 Directory Services Objects 107, 123
 directory services settings 176, 205
 Directory settings 38
 Diskette Image Utility 58, 60
 diskettes 57
 drivers 20, 39

E

eDirectory 116
 EJECT_VIRTUAL_FLOPPY 186
 enabling 72, 93
 error messages 133, 151
 European Union notice 213
 event log 56, 138
 event log entries 142
 external cables 23

F

factory default settings 75
 features 47, 50, 85, 93
 Federal Communications Commission (FCC)
 Notice 211, 212
 firmware upgrades 71
 first time access 47

G

GET_ALL_CABLES 196
 GET_ALL_USERS 165

GET_ALL_USERS_INFO 167
GET_DIR_CONFIG 175
GET_FIRMWARE_VERSION 184
GET_GLOBAL_SETTINGS 178
GET_HOST_POWER_STATUS 192
GET_NETWORK_SETTINGS 169
GET_USER 161
GET_VF_STATUS 188
GET_VPB_CABLE_STATUS 194
global settings 34
Graphical Remote Console 51
Group Administration 85, 86

H

handheld PC access 78
hardware features 47
hardware options installation 11
Headless Server Deployment 24
help resources 75, 78
host server troubleshooting 54
HOTKEY_CONFIG 190

I

initial access 47
INSERT_VIRTUAL_FLOPPY 185
Insight Manager 7 76, 86
Insight Manager 7 integration 75
Integrated Management Log (IML) 56
integration with RILOE II 75
internal cables 21
iPAQ Pocket PC 78

J

Japanese notice 215

K

keyboard connector 11, 14
kit contents 13

L

LAN cable connection 26
launching from Insight Manager 7 76
LDAP 116
LEDs 133
Lights-Out Configuration Utility 85
Lights-Out DOS Utility 199
Linux server support 44
Local CD Drive option 64
Local Floppy Drive option 65
Local Image File option 66
LOGIN 154
login problems 133

M

MOD_DIR_CONFIG 176, 177, 205
MOD_GLOBAL_SETTINGS 179
MOD_NETWORK_SETTINGS 171, 202
MOD_USER 162
mouse connector 11, 14

N

NetWare driver problems 133, 137
NetWare server support 43
network connection problems 133
network interface statistics 78
network settings 35

O

operating systems 11
operational overview 152
optimizing performance 45
optimum environment 39
overview, RIBCL 152

P

Pocket PC access 78
POST messages 55
power cycle server 56
power status reported incorrectly 136

powering up 11, 27
preparation procedures 11, 19, 95, 116

Q

queries 87
query definition 87

R

regulatory compliance notices 211
Remote Console 55
Remote Insight Cable (16-pin) 22
Remote Insight Cable (30-pin) 22
Remote Insight Cable connection 15
required software 95
RESET_RIB 169
RESET_SERVER 195
resetting to defaults 75
restarting the host server 56
restoring 75
RIB_INFO 168
RIBCL 151, 152
RILOE II Configuration Table 29
RILOE II diagnostics 77
RILOE II, installation 20
ROM-Based Setup Utility (RBSU) 39

S

safety considerations 11
schema installer 95
scripting, utilities for 85
security settings 74
Server PCI Slot and Cable Matrix 16
server reset sequences 55
server states 54
SERVER_INFO 192
SET_HOST_POWER 193
SET_VF_STATUS 189
settings 29, 93
SmartStart software 11, 41
SNMP alerts 76
SNMP settings 37
supported hardware 11, 16

supported software 11, 16
system status 56

T

technical support 209
telephone numbers 209
test alerts 72
timeout, Virtual Media 67
trap messages 72
troubleshooting 133, 134, 136, 137, 138, 140, 141, 142, 146

U

UPDATE_RIB_FIRMWARE 183
updating 71, 139
updating the system ROM 19
upgrading the systems management driver 20
USB support 11
user 68
user access 68
user and configuration settings 29, 39, 47, 68
user profile 68
user settings 33
USER_INFO 155
using virtual media 57, 63

V

video controller 25
video problems 133
video replays of previous server reset sequences 55
virtual devices 57
virtual floppy 57
Virtual Media 57, 59, 63, 67
Virtual Power Button Cable (4-pin) 21

W

Windows server support 42

X

XML header 152

XML, general guidelines 152